DRIVER

OCTOBER 1985

TWO HEADS ARE NOT ALWAYS BETTER THAN ONE
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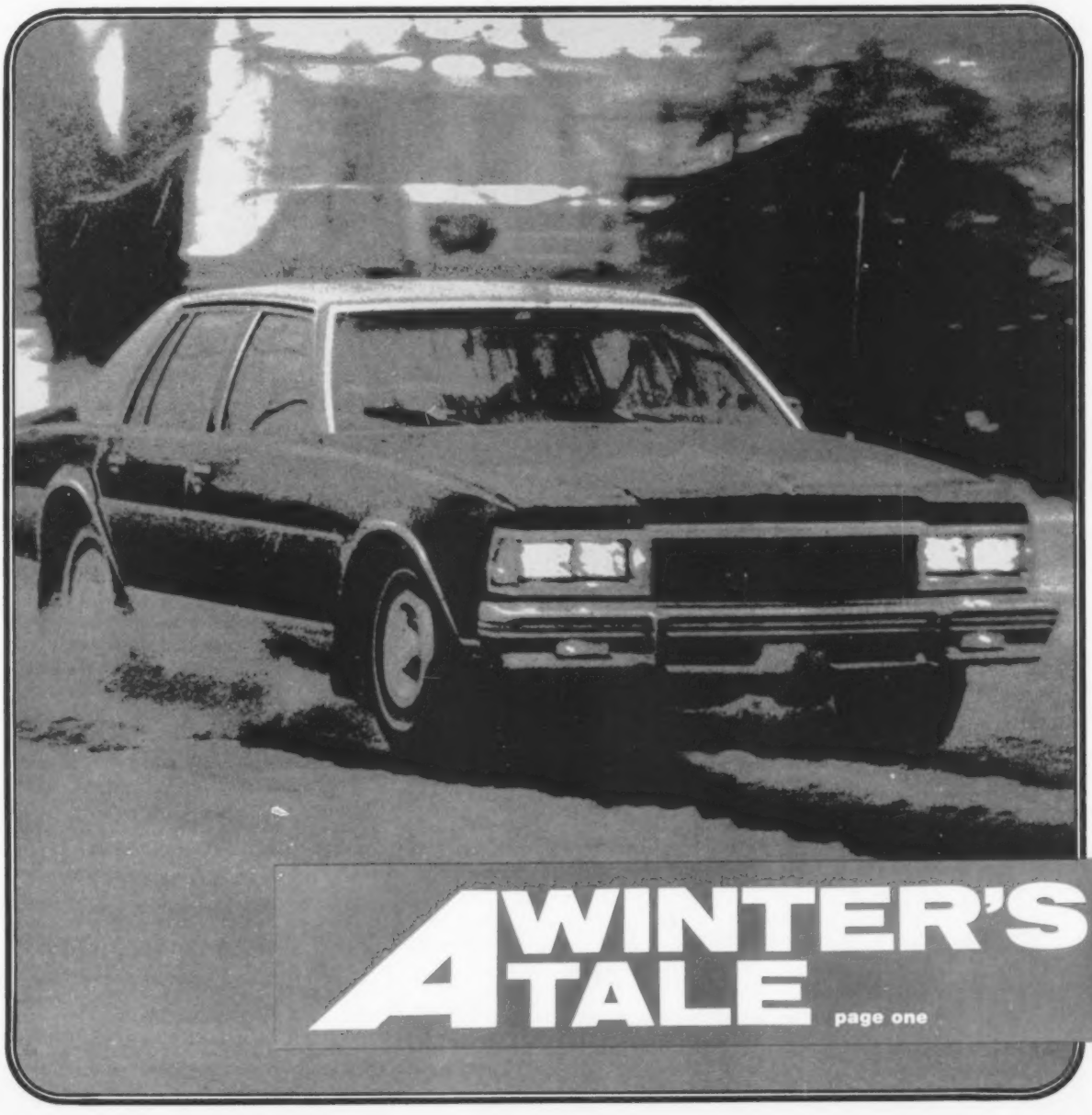
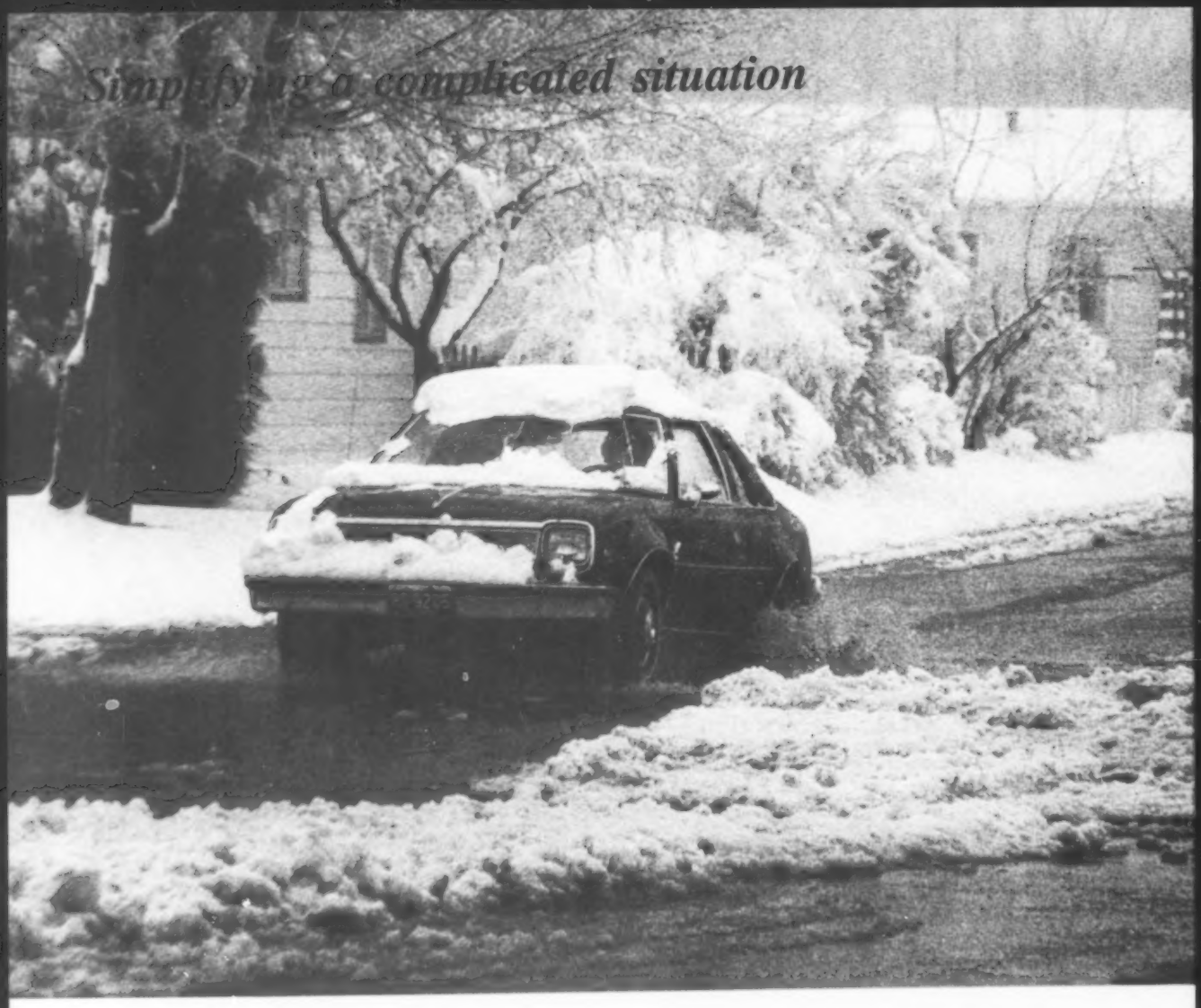


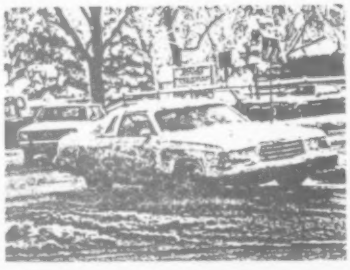
A WINTER'S TALE

page one

Simplifying a complicated situation



A WINTER'S TALE



Getting started in winter can be complicated. Get up early, just in case, and have a shovel handy.

The wind whipped snow that felt like ice needles against his face as he slipped the key into the car's doorlock. It went in with difficulty and when he tried to turn it, it didn't move. He removed it and inserted it again, but the lock was still jammed solid. The passenger door was in the same condition.

He knew immediately that the doorlocks were frozen and that the key had to be heated up before it would budge the lock. He tried breathing on the key, but that didn't work. He took off his glove and tried to heat the key with the warmth of his hand but that didn't work either, and his fingers began to go numb.

With no cigarette lighter or matches to heat the cold metal, he was just about to give up when he thought to try the rear hatch of the subcompact car. It opened fairly easily. He scrambled over the seats to the wheel and started the car and the heater. Then he forced the doors open from the inside, hopped out and got to work with an ice scraper on the windshield.

Usually a winter drive to work will begin without the complication of being unable to get into the car. However, it will always be more complicated than in milder weather when you can get in, fire up, and go. You can eliminate some of the possible complications by preparing the car, carrying the right equipment and driving cautiously.

PRE-WINTER CAR MAINTENANCE

There's only one word for working on the car during winter — unpleasant. There is less daylight to work in, so you must work indoors by artificial light. But the main problem is that it's *cold*. Therefore, you should accomplish any needed maintenance before the first snow. Following is a list of the main things to be checked out. Look it over and do it now, while you can still work without gloves.

- Exhaust System. Check its condition for rust and other damage. If necessary, make repairs to guard against danger of carbon monoxide leakage.
- Suspension System. Check shocks and springs for wear, and front end for alignment.
- Ignition System. Tune up the car, as necessary, to allow for easier starts.
- Lubricant. Change oil and oil filter. See our chart for recommended oil viscosity.

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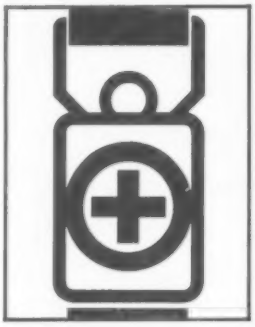

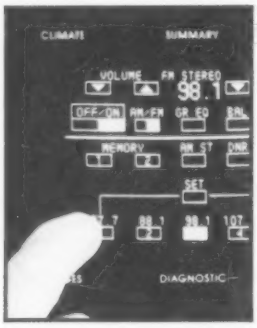

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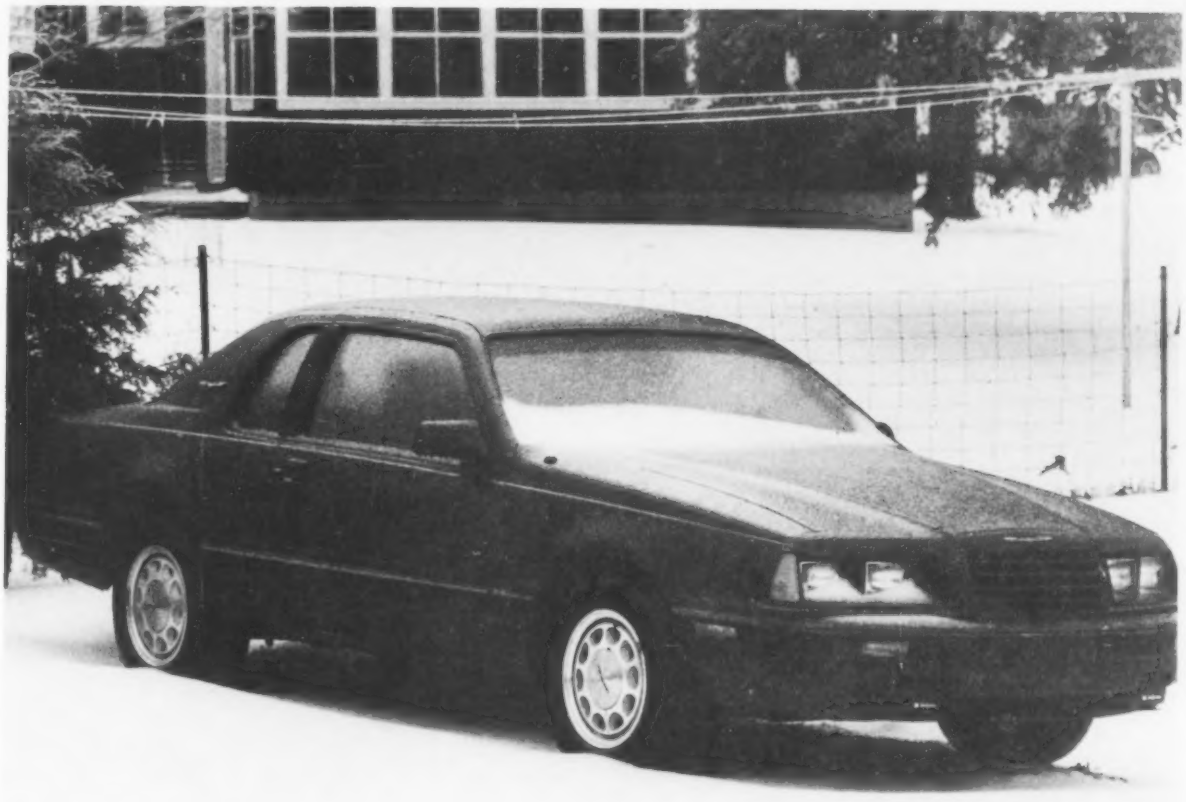


A cold night can leave your car encased in thick, crusted ice.

■ Cooling System. Make sure system is free of leaks and maintains proper pressure. Check level of coolant and its condition. Replace coolant if it is a year old.
■ Filters. Check all engine filters and replace as necessary.
■ Windshield Washer System. Fill reservoir with proper mix of solution. Check condition of wiper blades and replace as necessary.
■ Lighting System. Check operation of all lights, including turn signals and replace bulbs as necessary. Keep lenses clean at all times.
■ Brake System. Check operation of brakes and condition of shoes/pads. Replace and/or adjust brakes as necessary.

TIRES

Once those things are accomplished, your most important concern in winter preparation is the traction your car needs for moving around on ice and snow.

Traction means sticking to the road, and for that you need good snow tires. Snow tires have thicker, heavier treads and deeper grooves for better traction. Because of these treads, we recommend the use of snow tires for anyone who'll be traveling in areas where snow and icy highway conditions can occur. Ordinary street tires are not good enough.

Both bias-ply tires and radial tires can be obtained in a snow tire version. You may have your own reasons for liking bias-plies or radials, so we won't push one or the other. But we will give one pointer. Experts caution not to put a mix of regular and radial tires on any one axle of a car.

Radials handle differently than bias-ply tires because they are constructed so that more of the tread is in contact with the road at one time, which gives them that appearance of being a little flat. With a mixture of bias ply tires and radials your car could go into a skid, especially on ice.

Snow tires with studs imbedded in the tread, either metal or the so-called "soft studs," can be more effective than regular snow tires in some driving situations. However, the studs damage roads severely and are illegal in some areas, and restricted in others. If you opt for studs, be sure your state will allow them, and at what times during the year. To help there, we've printed a listing (see page 6) of the regulations concerning studs. Check with your state's highway patrol to be certain.

Your best bet, in very poor road conditions, might be tire chains. You can get regular chains, or you can purchase the kind with cleats, for more digging power. Of course, whatever kind you use, chains must be removed when road conditions no longer warrant their use. Any sort of metal on your tires, studs or chains, will tear up the road, and state governments

continued

are understandably reluctant to resurface their highways every year.

Chains have a reputation for being difficult to attach, but they are not. Follow the instructions provided with the chains for applying them to your wheels, and you're ready to go.

Some do-it-yourselfers think they can get more traction by letting a little air out of their tires. Forget that idea. Not only will it make handling the car more difficult, it'll also make your tires wear out faster. It will *not* give you any more traction. Take your money to the tire store and buy a good set of snow tires.

For your winter preparation you'll also need various tools and spare parts and the like, which we have included in a list in this article.

ANTI-SNOW PROTECTION

You're prepared now, but you still can't move the car until you can see out, and that thick coating of ice makes it impossible. If you don't enjoy scraping it off — and who does? — there are several ways to eliminate the problem, or at least decrease it.

Traction means sticking to the road, and for that you need good snow tires.

The first, and best, is a shelter. A garage will keep the snow off, and it will keep the car a little warmer. Warm cars start more easily without fifteen minutes of brushing and scraping. Carports keep falling snow off the car and not the blowing snow, but they are still better than open air.

If you're not blessed with your own garage or carport, cover the car with a tarpaulin, or get one of those custom-made car covers. Lacking something that large, try covering the windows, or at least the windshield and back window. This will decrease the morning's work, and shorten the time the defroster has to run.

If you don't have anything that will serve to cover the windows, you'll just have to contend with the ice. Get the car started and run the defroster to loosen the ice. Then dig out the plastic ice scraper/brush. Brush *all* the snow off the car so it won't blow around and obscure your vision. Scrape *all* the ice off the windows so you won't be left with blind spots where you can't see the road and the traffic around you.

STARTS AND STOPS

Vision is vitally important because driving on ice and snow is a lot trickier than any other driving. It should be done very cautiously, allowing more time for turns, stops, starts and any other movements. Instead, many people drive as though they don't know that, or don't believe it — trying for jack-rabbit starts, not allowing enough room for a stop, etc.

(top)
A heavy foot on the gas will spin the wheel and kick up a lot of snow and slush, but gradual pressure on the pedal will get you started more easily.

(left)
Maintain a healthy distance between yourself and other cars because any maneuver will take more time on winter road surfaces than on dry ones.

Starting out is especially tricky. When the light changes at the intersection, many people will gun their engines. Some of them get their cars moving this way, with their cars fishtailing along throwing slush and snow everywhere, but more of them don't. Obviously, they don't know that a heavy foot won't work in the winter.

The right way is to apply very light pressure on the gas pedal, just enough to get the car rolling. Any faster than that and your tires will spin, especially on ice. (If you're not moving and the speedometer reads 10 mph you'll know what's wrong.)

Once you know the car is moving you can speed up, but do so gradually because the wheels will spin just as easily after you start if you apply too much foot on the gas. Keep your speed down below the posted limit — the posted limits on road signs are for dry roads, not for the wet surfaces.

The overall rule for driving in winter is "The less speed, the better." This will enable you to anticipate your moves. When you plan to turn or change lanes — and especially when stopping — slow down in advance of your move. Take your foot off the gas and pump the brakes if you need even less speed for your movement.

Both bias-ply tires and radial tires can be obtained in a snow tire version.

This means put light pressure on the brakes, take your foot off the pedal and then press it again. This allows the wheels to keep turning as you slow. If you put too much pressure on the brakes you will lock the wheels up and cause the car to slide.

Remember, everything takes more time and distance on snow and ice — getting the car up to speed, turns and maneuvers, and stops. So watch ahead and anticipate.

Keep far back from traffic. This gives you the space to stop if you must avoid a hazard ahead. Allow more space than you would on a dry road.

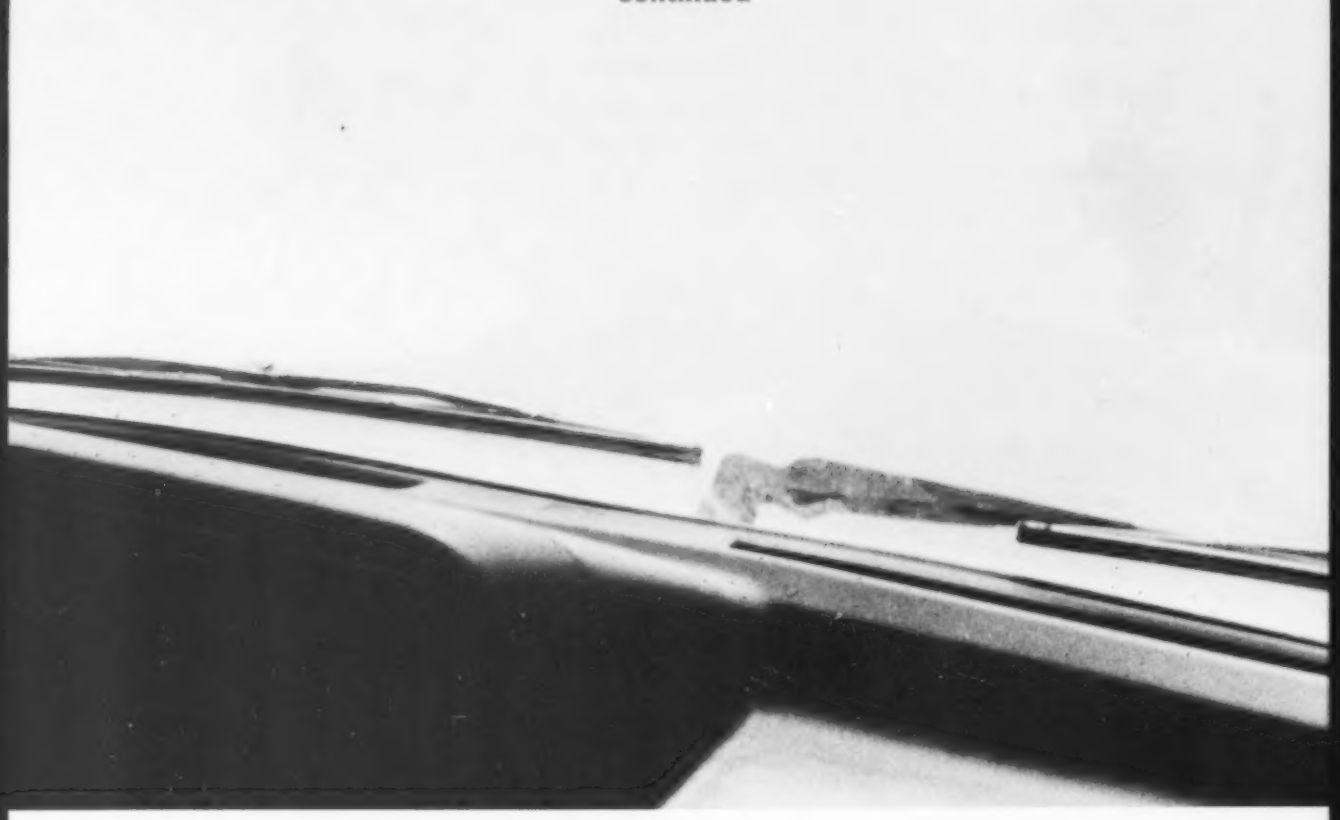
SKIDS

Too much speed is the most common cause of a skid. Skids can also happen unexpectedly, like when you hit a spot in the road that is icier than the rest of the route.

When a skid occurs, you need to regain control as quickly as you can, without going off the road or hitting something. Remember, if you are traveling slowly most skids will not be too serious, so the first thing is to keep your head.

What is happening is that the rear wheels are trying to overtake the front. To slow the rear wheels, take your foot off the accelerator. Then steer to straighten the car out. Steer *into* the skid — if

The brush-off. Clear the snow off the entire car, not just the windows, so it doesn't blow around and blind you.



the tail of your car is going to the right, steer to the right; if it's going left, steer left. (This will be an automatic action for most people.) If you need to slow further to get out of the skid, pump the brakes lightly. Once your car is straightened out, drive more slowly to prevent a recurrence of the skid.

For those cars with front wheel drive, the experts recommend that you do not take your foot off the gas, because the drive wheels will slow down but the rear wheels will still be going the same speed, possibly making the skid worse. Instead, speed up slightly to keep the rear wheels behind you. (Or else you can take the car out of gear entirely.) The steering into the skid method is the same. Once you're back in control, you can slow down to a safer speed.

Skids can still occur after most of the snow and ice is gone. There are sometimes patches of ice that remain in places that receive no sunlight — in shadows of buildings or trees, or beneath overpasses. When you see one of these areas coming up, slow down while you're still on dry pavement and coast through the sha-

continued

STUDDED TIRE

This is a list, by state and province, of the restrictions on the use of studded tires in the United States and Canada. The dates refer to the time periods during which studs may be used; they may not be used before or after those dates. This information from the American Automobile Association is current as of last winter. Check with the local authorities to be sure.

UNITED STATES

Alabama — Rubber studs permitted; metal illegal

Alaska — September 15-May 1; September 30 to April 15 south of 60 degrees N.

Arizona — October 1-May 1

Arkansas — November 15-April 15

California — November 1-April 1

Colorado — No restrictions

Connecticut — November 15-April 1

Delaware — October 15-April 15

District of Columbia — October 15-April 15

Florida — Studs which do not damage highway are permitted

Georgia — Not permitted except for snow and ice driving conditions

Hawaii — Prohibited

Idaho — October 1-April 15

Illinois — Prohibited

Indiana — October 1-May 1

Iowa — November 1-April 1

Kansas — November 1-April 15

Kentucky — No restrictions

Louisiana — Prohibited

Maine — October 2-April 30

Maryland — Prohibited except in western counties November 1-March 31

Massachusetts — November 2-April 30

Michigan — State-approved "soft studs" only November 15-April 1; northern part of state October 1-May 1

Minnesota — Prohibited, except for non-residents, who are subject to restrictions imposed by their state of residency

(left)
Fog is one of the worst hazards you will face. Cars come out of nowhere, and sometimes you can't even see the lines on the road.

(right)
Road signs give the speed limits for optimum conditions. The numbers listed will probably be too fast on snow and ice.

(below)
Carpooling can provide unexpected benefits in winter, like having someone to push you out when you get stuck.

RESTRICTIONS

Mississippi — Prohibited
Missouri — November 1-March 31
Montana — October 1-May 31
Nebraska — November 1-March 15
Nevada — October 1-April 30
New Hampshire — No restrictions
New Jersey — November 15-April 1
New Mexico — No restrictions
New York — October 16-April 30
North Carolina — No restrictions
North Dakota — October 15-April 15
Ohio — November 1-April 15
Oklahoma — November 1-April 1
Oregon — November 1-April 30
Pennsylvania — November 1-April 1
Rhode Island — November 15-April 1
South Carolina — Permitted if do not project more than 1/16 inch when compressed
South Dakota — October 15-April 15
Tennessee — October 1-April 30
Texas — Only studs which will not damage the highway are permissible
Utah — State-approved "soft studs" permitted October 15-March 31
Vermont — No restrictions
Virginia — October 15-April 15
Washington — November 1-April 1
West Virginia — November 1-April 15
Wisconsin — Prohibited, except out-of-state vehicles may use for 30 days
Wyoming — No restrictions. Chains required in snow emergencies

CANADIAN PROVINCES
Alberta — No restrictions
British Columbia — October 1-April 30
Manitoba — October 1-April 30
New Brunswick — October 16-April 30
Newfoundland — November 1-April 30
Northwest Territories — No restrictions
Nova Scotia — October 15-April 30
Ontario — Prohibited
Prince Edward Island — October 1-May 31
Quebec — Permitted October 15-May 1 for vehicles less than 2300 kg
Saskatchewan — No restrictions
Yukon Territory — No restrictions

dowed area with the car in gear. Then speed up again after you're past the shadow. Maybe there'll be no ice, but it's better to assume there will be.

STUCK

You might come out in the morning to your car and find it stuck in the snow. Or you might do the job yourself by skidding off the road. If this complication happens, don't lose your temper.

You can often get moving by rocking the car. Ease the car forward and then switch to reverse and ease backward, repeating the procedure until your wheels catch on something a little more solid. If there are others with you, they can help push you out.

If there's nobody around and rocking the car doesn't work, it's time to get in the trunk for the supplies. Use your shovel to dig around the wheels and the sand (or whatever you have) to provide traction for the wheels.

You might come out in the morning to your car and find it stuck in the snow. Or you might do the job yourself by skidding off the road. If this complication happens, don't lose your temper.

COOL IT

In closing, we'll mention a complication you can really do without this winter, and that is impatience. Winter driving conditions can be inconvenient, annoying, and at times infuriating. You will be slowed down; count on it. The best advice we can give you is this: Whenever winter conditions mess up the roads, decide very firmly that you are in no hurry. Decide that you have all the time in the world and it doesn't matter when you arrive. Resign yourself to the slower pace and relax. Concentrate on safe, cautious driving. Although you can't control the weather or the actions of other drivers, you can control your own attitude and the manner in which you drive. That will help a lot.

This car, with snow obscuring most of the back window, will have some big blind spots for the driver to overcome. Keep your glass clear at all times.

Melting snow and slush will be just as slick as ice, so hold your speed down.

OILS FOR WINTER USE

Lowest Atmospheric Temperature Expected	Single Viscosity Oils	Multi-Viscosity Oils
32º	20, 20W	10W-30, 10W-40
0º	20W	10W-30, 10W-40
Below 0º F	5W*	5W-20, 5W-30

*SAE 5W single-viscosity oils should not be used for sustained high-speed driving (above 55 mph).

Be especially alert in city traffic, because some people don't know the right way to drive in snow conditions.

YOUR WINTER SURVIVAL KIT

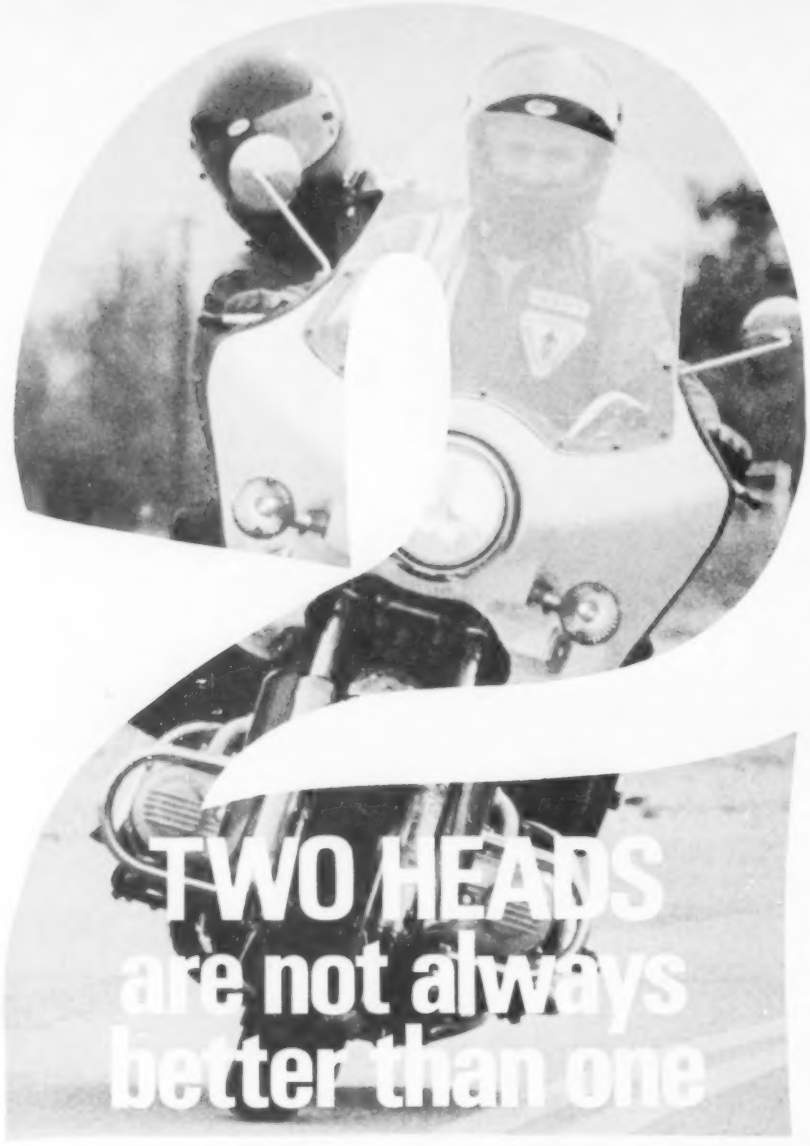
In order to put your survival kit in the trunk, you'll have to clean the trunk out. Keep the things in the first list in there at all times; they're useful all year. The second list is the one for special winter survival times.

ALL-YEAR STUFF

bumper jack and lug wrench
spare tire (aired and in good condition)
assorted screwdrivers
assorted wrenches, with one adjustable wrench
pliers
electrical tape (for emergency repairs)
medium-gauge wire (ditto)
spare bulbs and fuses
oil
coolant
fluids: brake, power steering, transmission
a first aid kit
road flares, or reflectors
spare wiper blades
windshield washer solution
spare fanbelt
some roadmaps
work light
flashlight and extra batteries
fire extinguisher
jumper cables.

THE WINTER STUFF

an ice scraper/brush combination
a small shovel
sand, salt or kitty litter (for traction)
tow rope or chain
blankets
tire chains
galoshes
gloves



TWO HEADS are not always better than one

by MSgt. Richard D. Thiele
Ellsworth Air Force Base, South Dakota

On a sunny, Sunday afternoon, two dependent sons of an active duty master sergeant climbed aboard the family's only motorcycle. The visibility that day was unlimited and the road surface was dry. Both the operator (aged 20) and the passenger (aged 24) had satisfactorily completed the Motorcycle Safety Foundation's basic and advanced courses. They had a cumulative total of 16 years motorcycle riding experience.

They were both wearing approved safety helmets, short sleeve T-shirts, blue jeans and tennis shoes. While riding around the perimeter of the base, they entered a right-hand curve at approximately 35 mph; the speed limit was posted at 25 mph. Because the speed was in excess of the posted limit, excessive leaning of the motorcycle was required to negotiate the curve. The passenger, not accustomed to riding dual, leaned the motorcycle as if he were riding solo. The combination of the two experienced (solo) motorcycle operators exceeded the amount of lean required, causing the motorcycle to impact the pavement on its right side.

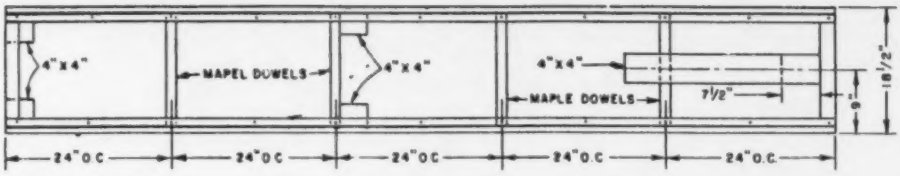
The motorcycle, with operator and passenger, slid across the road and into a grass-covered ditch. On hitting the ditch, the motorcycle righted itself to a vertical position. Attempting to regain control, the operator applied front and rear wheel brakes. Due to the estimated speed of 20 mph and the grass being slicker than the road surface, the motorcycle accelerated off the grass into a gravel parking lot. The front wheel imbedded in the gravel, throwing the passenger off to the left side and the operator off to the right side over the handle bars.

Both young men received injuries. The passenger was unable to get up due to back pain and lacerations of the right arm. The operator got up and went for help, leaving the scene of the accident. After help arrived at the scene, an ambulance was called to take the passenger to the hospital for x-rays and examination. He required 52 sutures to close the laceration on his right arm. The x-ray disclosed no broken bones. The operator was examined and treated for abrasions on both arms, legs, and back. Both were hospitalized for 24 hours for observation and treatment and lost four days from their jobs.

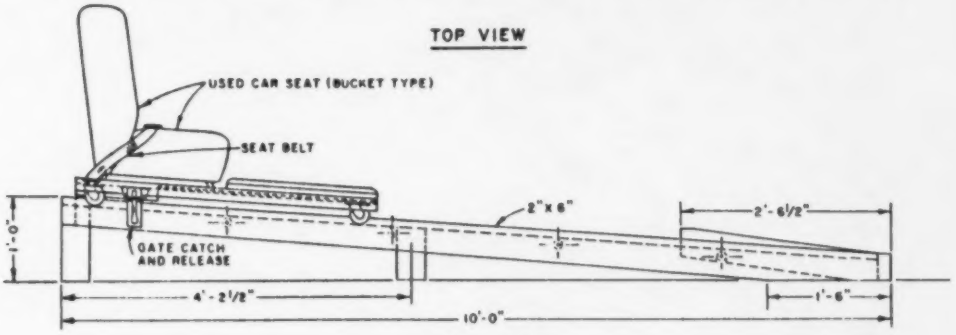
In addition to the medical expenses (totaling $385.00), the operator was sited by security police for (a) failure to render aid, (b) leaving the scene of an accident, and (c) exceeding the posted speed limit. The magistrate judge ordered a fine of $200.00. Total cost was $585.00 plus lost wages of both motorcyclists of $300.00.

The moral of this story and lessons learned:

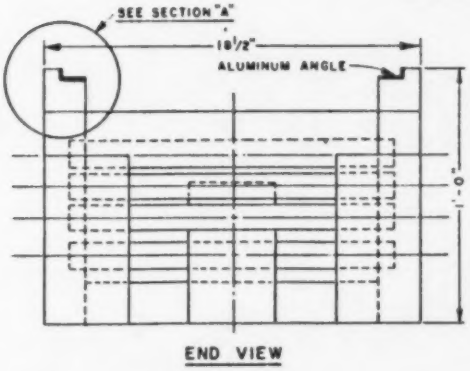
- Motorcycle operators, regardless of their abilities to ride solo, need additional experience when carrying passengers, preferably in a controlled environment.
- Passengers, experienced or novice, must realize that the operator has to control the amount of lean the motorcycle requires and be permitted to effect that lean, by himself.
- Under the best conditions, speed limits still must be adhered to.
- The wear of proper safety clothing, boots and jackets, would have reduced the extent of injuries and lost wages.
- Always render aid to accident victims and don't leave the scene of an accident until other assistance arrives.
- Don't exceed posted speed limits.



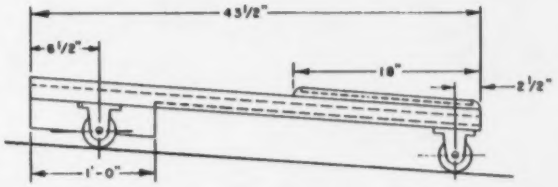
TOP VIEW



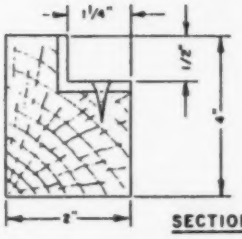
RIGHT SIDE



END VIEW



DETAIL OF PLATFORM

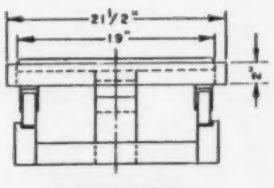


SECTION "A"

Seat Belt Demonstrator

BILL OF MATERIALS

2 - 2"x 6"x 10' LONG
1 - 2"x 6"x 4' LONG
8' OF 1¼" MAPLE DOWEL
4 - 3" BALL BEARING CASTERS (NON-SWIVEL)
1/2"x 1¼" ALUMINUM ANGLE
16 - 1/2"x 1½" MACHINE BOLTS
1 - BUCKET CAR SEAT (USED)
6' OF 3/4" PLYWOOD
4' OF 5/8" PLYWOOD
4 SQUARE FEET OF RUBBER MAT (APPROX 1/8" THICK)
8' OF 3/4" QUARTER ROUND
4 LINEAL FEET 4"x 4"
1-EACH GATE CATCH
1-EACH SEAT BELTS



FRONT VIEW

GENERAL NOTES:

1 TO CONSTRUCTED OF No 1 GRADE MATERIALS

2 CAR SEAT TO BE ACQUIRED FROM "WRECKED" CAR AND IN FAIR TO GOOD CONDITION.

3 GIVE ONE COAT CLEAR SHELLAC AND TWO COATS OF CLEAR VARNISH.

4 DO NOT SCALE DRAWING

5 TRACK CAN BE RAISED BY PLACING BLOCKS (OF DESIRED HEIGHT) UNDER REAR AND MIDDLE LEGS

Lefty

Which foot do you use for braking? Most people use the right foot, which insures that their foot is completely off the accelerator. Some others, however, use their left foot, perhaps thinking their braking will be faster this way.

We don't recommend using the left foot. If you do, you will risk applying the brake and the gas at the same time, which will wear out your brakes faster than ordinary use. Another problem is the tendency to drive with the left foot resting on the brake. This gives a false signal to those following you; you appear to be braking all the time.

Trust us, your reflexes will enable your right foot to switch from the accelerator to the brake in time.

Banana Peelings

Many things could cause you to "slip up" on the road. Pieces of tire tread are common road hazards, along with plywood boards, cardboard boxes and grocery sacks — to say nothing of the sharp stuff that will puncture your favorite set of tires. Watch for these pieces of highway flotsam, and avoid them carefully. Slow down and drive around them, or straddle them. Be especially careful about going into other traffic lanes to avoid the trash; move over only when you will not impede other motorists.

OBEYING T

1

Until Naval Station Mare Island announced that the mandatory safety belt rule was going to be enforced, the two people whose stories follow had never bothered to buckle up. They are alive today because of that mandatory use rule. The stories first appeared in the base newspaper, "Mare's Tale."

"What a wimp." That was my thought when I saw someone stop to fasten their seat belt. "Why can't they be like 'Starsky and Hutch' or the 'Dukes of Hazzard' or any of the police who run at high speeds through city streets or across the country without a seat belt, have accidents and never even muss their hair? I see this on T.V. every day."

You notice I said "this was my thought" because it sure isn't any more. I laughed at Batman while he told Robin to fasten his seat belt before they took off after the Joker or some other villain, but I am here today able to write this because something told me that maybe I should put on my seat belt before I got to Mare Island and had to struggle with it at the base gate.

Traveling along what I have come to know as one of the most dangerous highways in California, on my way to a private dinner/birthday party in February, I had an accident with my car. This was not anything new to me; I have had various accidents in the 26 years that I have been behind the wheel, but all the others were simple fender-benders that ran up my insurance rates for a while, but that was about it. What made this accident different was the fact that my car was totalled. It now sits in a lot, a $12,000 pile of twisted fiberglass and metal. After hitting a guard rail head on and flipping the car, I guess I really shouldn't expect anything but a total wreck. But was it a total loss?

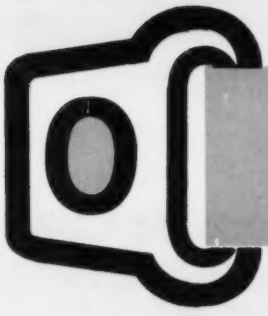
I don't think so, since another fact that made this accident different was the simple click that resounded when I put my seat belt on before I left. Looking at the car now, I realize that the accident was not a "total" only because I walked away from it, something that could not have occurred if I had not buckled up. Pilots say that any landing you walk away from is a good one. If there was anything good about this accident, it is simply that I walked away from it.

The people who passed by and opened my door for me were as amazed as I was, as I hung there upside down supported by my seat belt, that I was alive and alert at all. The people in Novato were just as amazed and many now do as I do, they never get into their car anymore without buckling up.

My relatives in New York, who are residents of the first state with a law mandating the use of seat belts, wrote to me before the accident, that the law was the most stupid thing that they had ever heard of. Now, however, they buckle up too.

I can't stress enough that the use of the seat belt saved my life. The Highway Patrol says that they have never had to unstrap a dead person from a wreck. I am glad that I have kept that record complete. Now if they will only come up with a seat belt for dogs, I will truly be at ease as I travel the highways. (Chaplain Joseph Spatorico)

THE RULES



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On February 8th, Jean Graves and a companion reminded each other to fasten their seat belts as they left Mare Island for lunch. They were "practicing" for the approaching enforcement of seat belt regulations on Mare Island.

That evening, as Graves left the Vallejo Yacht Club in a car driven by a friend, another vehicle approached rapidly from the left. "By the time we realized it wasn't a very good idea to pull out, it was too late," she explains. The next day she was recovering from a broadside collision, shaken but unhurt. The car in which she was a passenger had been taken to a junkyard.

Graves credits seat belts with saving her and her companion from serious injury, and now actively advocates their use.

"I thank God I had my belt on! Even with it, my sternum was cracked, but I walked away and wasn't hospitalized. I was immediately free to 'smell the roses,' and that's a neat feeling.

"Had the accident happened the night before, I would not have had my belt on because I was not in the habit of wearing it as a passenger," admits Graves. "It was only because I knew the base policy was coming that I even had it on."

Graves points out with irony that she was personally involved in implementing the seat belt enforcement program that went into effect November 1st. As the Naval Station Administrative Officer, she was called upon to work out some of the details of the instruction.

"I hadn't thought a whole lot about wearing a seat belt as a passenger," admits Graves, "until we started implementing the program. As a driver, I'd been wearing a seat belt faithfully for some time; I started that about eight months ago based on a safety film I saw.

"That film made me realize how lucky I was to have walked away from three other accidents I'd been in. It had finally dawned on me that I was being stubborn . . . and that was dumb. Because of that film, I began buckling up as a driver 100% of the time."

It wasn't until October 25th that Graves began to realize her habits needed some adjusting. "I happened to have gone out to lunch that day, and coming back in through the gate, I realized I wasn't wearing my seat belt. I know I should get used to wearing it as a passenger because we were going to have to wear it on base, if nowhere else. So that evening when I went out, I remembered to buckle up each time I got into the car . . . basically to "practice" for the Mare Island regulation."

Today, Graves is glad she bothered to "practice."

"I don't like to think about what would have happened if I didn't have a belt on," she said, remembering the accident. "That is rather frightening."

The impact pushed the vehicle five feet to the right. "I just closed my eyes and it was all over. When I opened them there was glass all over my lap and all over the floor. The driver's window was completely gone; chunks had been thrown all over us. The windshield was shattered although it stayed intact. Thank God it was safety glass."

Graves believes she escaped that accident unharmed because of her shoulder-lap combination seat belt. "Had I been wearing just a lap belt, I think I would have gone into the driver and the steering wheel. If I had no seat belt on at all, I definitely would have been on top of the driver, if not out the driver's window. That's the direction I was heading in. If it weren't for the seat belt, I just don't know how far . . . "

The experience has prompted Graves to encourage seat belt use whenever she has the opportunity. "Please don't fight the idea! Remember that an accident can happen in a split second . . . and it makes no difference at the time of impact who's right or who's wrong."

Timely Topics

DOLE ANNOUNCES RULE TO ENHANCE MOTORCYCLE SAFETY

Secretary of Transportation Elizabeth Hanford Dole says a new rule issued by the National Highway Traffic Safety Administration (NHTSA), "will enhance motorcycle safety by allowing the option of a modulating headlamp on motorcycles.

"One of the main reasons motorcycles are involved in accidents is because they are difficult to see by other motorists in traffic," Secretary Dole said. "We believe all cyclists should be given the option to choose this type of headlamp."

A modulating headlamp continually flickers from high intensity to low intensity on either upper or lower beam and makes the motorcycle and its operator more visible during daylight operation.

NHTSA's rule amends a federal motor vehicle safety standard which previously required headlamps on motorcycles to burn steadily when in use. It permits installation of modulating headlamps after Aug. 21, 1985. The agency said a modulating headlamp should cost an estimated $40.

Research conducted by the safety agency shows that there are three principal means of improving the visibility of motorcycles and their operators: 1) the wearing of a high visibility vest and helmet cover by the cyclist, 2) the continual operation of the low beam of the headlamp during daylight hours, and 3) the modulation or continual flickering of the headlamp.

"I want to emphatically reassure the public that child safety seats are safe and effective and they should definitely continue using these lifesaving devices. The news reports were misleading because they erroneously interpreted data from test results. The important thing is that all of the child seats which have been sold to the public passed the most critical part of the NHTSA required test, the one that simulates an actual crash," Steed said.

She said owners should carefully follow the manufacturer's directions for installing the safety seat. A recent NHTSA survey of child seats indicated that most are not installed correctly.

POPULATION COVERED BY STATE SEAT BELT USE LAWS

On July 11, 1984, the U.S Department of Transportation ruled that if states containing two-thirds of the population enact seat belt use laws by April 1, 1989, installation of automatic ("passive") crash protection devices will not be required in new cars.

According to 1984 Census Bureau estimates, total U.S. population is 237 million, of which 158 million would represent two-thirds. As of 1 August, state seat belt use laws in 14 states cover or will cover 39 percent of the population as follows (all figures rounded):

State	State Population Millions	% of the U.S.
New York	17.7	7.5
New Jersey	7.4	3.1
Illinois	11.5	4.9
Missouri	4.9	2.1
Michigan	9.2	3.9
New Mexico	1.4	0.6
Indiana	5.5	2.3
North Carolina	6.0	2.5
Oklahoma	3.2	1.4
Nebraska	1.6	0.7
Hawaii	1.0	0.4
Texas	14.8	6.2
Connecticut	3.1	1.3
Louisiana	4.4	1.9

THEFT-MARKING RULE THREATENS GRAY MARKET SURVIVAL

A proposed NHTSA vehicle theft standard, that requires the marking of vehicle identification numbers (VIN) on 14 vehicle components, threatens the survival of gray market automobile importation. Gray market automobiles are imported cars brought into this country legally, but outside the normal factory authorized distribution channels. The components slated to be marked would almost require the gray market importer to rebuild the automobile in order to meet the standard. The new NHTSA rule applies to any vehicle that has a high theft rate, generally the more expensive luxury automobiles that have been most profitable for gray market importation.

LONG YELLOW LIGHT REDUCES ACCIDENTS

A study by the Institute for Highway Safety suggests that long yellow lights may reduce traffic accidents at intersections. Of 91 intersections studied, those with quicker signals had substantially higher crash rates than those with longer signals.

ALCOHOL SENSORS DETECT DRUNK DRIVERS

A passive alcohol sensor, built into a standard police flashlight, greatly improves detection of drunk drivers according to a new study by the Insurance Institute for Highway Safety. Police officers hold the device near the driver's face for an electronic readout of the motorist's blood alcohol concentration (BAC). A police field test using the passive alcohol sensors detected 68 percent of drivers with BACs of 0.10 or greater and 45 percent of drivers with BACs of 0.05-0.99 compared with 45 percent and 24 percent using conventional detection methods. It also reduced the number of unnecessarily detained drivers by 10 percent.

ALL 50 STATES HAVE CHILD RESTRAINT LAWS

As of July 1, 1985, all 50 states have child-restraint laws in effect. Across the country, states are reporting a significant drop in the number of child fatalities in car accidents. Moreover, an American Medical Association study indicates that restraint devices almost eliminate any risk of death in automobile accidents for children four years old or younger.

LIFE INSURANCE COMPANY ADDS NO-CHARGE SAFETY BELT ENDORSEMENT

The American Automobile Association has added a safety belt endorsement doubling the death benefit to its travel and accident policies sold by the AAA Life Insurance Company. The action was taken in support of AAA's national policy to encourage safety belt use by motorists.

Under terms of the endorsement, the benefit amount is doubled if loss of life occurs to a covered driver or passenger in an automobile accident and proof is submitted indicating the insured wore a safety belt at the time of the accident. AAA said proof may be provided in the form of a police accident report or "other reasonable proof."

The endorsements to AAA's Personal Accident Insurance policy and "365" Travel Accident Insurance policy have been added without any increase in premiums to members, AAA said.

The policy endorsement also extends to children covered by the policy properly secured in a child restraint system utilized as recommended by the manufacturer.

"This is another step which underscores AAA's commitment to get our members and all motorists to wear safety belts," said John Bobinger, Jr., vice president of AAA Life Insurance Company.

TRUE ACCIDENTS

Following are a few reports of accidents involving Air Force members. We have removed names and references to dates and places.

HIGH SPEED PASS

An airman was driving toward town on a highway at 2315 hours. He passed a semi at about 80 mph and lost control of his car. The car spun, crossed over the median and rolled twice. The driver was thrown from the car and died at the scene. He had not worn the vehicle's seat belt.

DRINKING

A staff sergeant attended a party at an off-base recreation area 17 miles from his overseas base. During the evening he was seen drinking alcoholic beverages from 1915 to 2245 hours. He left the party to drive home. As he tried to make an exit, he lost control of the car and it hit a guardrail. The guardrail went through the windshield, striking the staff sergeant. The car flipped on its top and then landed on its wheels. The driver died of massive head injuiries. His Blood Alcohol Level (BAL) tested out at .242.

RAIN

A sergeant was driving south toward her overseas base at about 1000 hours. It was raining and the streets were wet and very slick. About 10½ miles north of the base she entered an "S" curve and lost control of the car. It slid broadside across the road and was hit by a northbound 60-passenger bus. She was pinned in the wreckage under the front of the bus and received fatal injuries.

PEDESTRIAN

A staff sergeant spent several hours drinking with friends at his apartment. Then he drove his car to a club where he continued drinking. A friend borrowed his car for an errand and when he didn't return to the club, the staff sergeant and another friend decided to walk home. It was after midnight and it was raining. After walking a mile and a half, they crossed a four-lane street with a median. The friend crossed and turned to see the staff sergeant walking north in the southbound lane. He called to him and the staff sergeant crossed the median and stepped into the north lane, directly into the path of a car. The car hit him and knocked or dragged him for 10 feet. He suffered multiple fractures and internal injuries, and was taken to the hospital where he died four days later. The visibility-limiting factors: The rainstorm, the area of the accident was not an intersection and was unlighted, and the staff sergeant was wearing black pants and shirt. His Blood Alcohol had tested out at .15.

SPEEDING CYCLE

Two airmen were riding on a motorcycle on a street near their overseas base at about 1900 hours. Both were wearing helmets. The driver lost control of the cycle on a slight "S" curve and hit the curb on the right side of the street. The motorcycle slid on its side across the street and collided with the left curb and then an 18-inch square stone entrance pillar to a driveway. The two airmen stayed with the cycle until it hit the gate post. Both were killed, the driver from massive head and chest injuries, and the passenger from multiple internal injuries including a punctured heart. Investigators said the cause of the mishap was excessive speed.

SPEED AND IMPAIRMENT

A senior airman was riding his motorcycle north on a road at 2300 hours. He was following his girlfriend, who was driving her car. She saw him pass her at high speed. When she reached their destination he was not there. She and her father went back to look for him and found him at about 0130 hours. The authorities declared him dead at the scene. Highway patrol investigators estimated his speed at 80 mph. They said he had failed to negotiate a left curve, and the motorcycle went off the road and hit a dirt mound. The airman was thrown off and sustained fatal head injuries. He had not worn his helmet; it was still attached to the cycle. His Blood Alcohol Level was .13, and he had a measurable amount of marijuana in his body.

ALCOHOL

Three sergeants left a bar at about 2400 hours to drive home. While driving on an access ramp from one highway to another, the car hit a median and flipped over onto its right side. The driver and one passenger were ejected through the sun roof. The other passenger was pinned between the door jamb and the road. The two pushed the car back to its wheels to free the other passenger. The driver was uninjured, the ejected passenger received cuts and bruises to his shoulder, hands and face, and the pinned passenger received severe cuts to his face and a crushed right arm. All three had been drinking and nobody had worn seat belts.

FATIQUE

A sergeant was driving his car south from one base to another (a distance of 300 miles), returning from a TDY. He had only two hours sleep the night before. He was being followed by a friend, a senior airman in his own car. They left at about 1030 hours. About an hour later the senior airman noticed the sergeant's car swaying. They stopped and he asked the sergeant if he was all right. The sergeant said, "Yes, just a little tired," and said they would rest in a town about 60 miles away. When they got there, he said he was fine and they continued. About 30 miles farther they were joined by another friend, an airman first class who was riding his motorcycle. An hour and a half later the three stopped for gas and a soft drink. Asked if he wanted to rest longer, the sergeant said they had only 100 miles to their destination and they might as well get home. He took off and the others followed two or three minutes later. After about five minutes they came upon a road construction area with dust and gravel, no centerline and a posted speed limit of 35 mph. At about 1450 another driver ahead going 60-65 mph saw the sergeant pass him at 70-75, swaying back and forth. The sergeant entered a gradual curve and drifted into the northbound lanes. The driver of a northbound van squeezed as far to the right as he could without losing control. The van and the sergeant's car collided head-on. After moving together for a distance the cars separated, the sergeant's car spinning away to land on the right shoulder and the van coming to rest on the opposite shoulder with its rearend in the northbound lanes. The two occupants of the van were ejected through the windshield, receiving serious injuries. The sergeant was pinned between the seat and the steering wheel. He received massive head and chest injuries and died at the scene.

(above)
Dash panels on some new cars can provide more information and controls in a smaller area than ever before. The questions are: Can the driver effectively use all the available information and operate the controls without risking diverting too much attention from the road?

Too much of a GOOD THING

The more information you have the better decisions you can make. Or so we've believed for years. That's why the backyard mechanic is always campaigning for idiot — pardon — warning lights to be replaced with functional gages.

However, a problem seems to be developing that resembles system overload: too much information. So, instead of making a better decision with all the available information, the individual makes no decision because s/he is unable to process all the inputs in a timely manner.

On the job this is a form of burn out; behind the wheel of a car it can lead to an accident.

Don't misunderstand. Most drivers should be able to sort the available information for what they need, even if their car is capable of providing an influx of information about every source from AAA[1] to ZF[2].

The real concern is not with the mass of available information but the methods the driver may have to use to call it up. There just seem to be too many buttons, knobs and switches in some cars.

When the driver has to divert her/his attention from the road to the dash board to locate a particular button, knob or switch, there is a risk that s/he will miss some vital bit of outside information. And the longer the driver's attention is off the road, trying to find whatever it is s/he's looking for, the greater the risk the missing bits of information will lead to an accident.

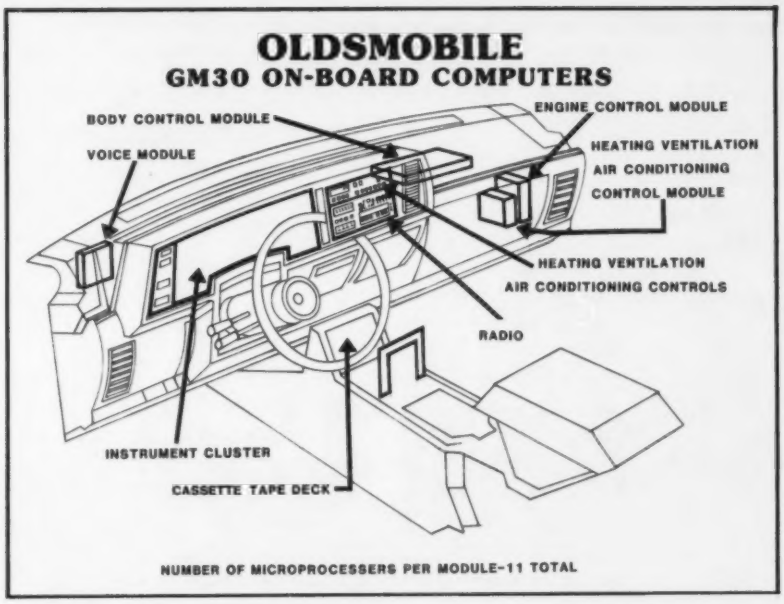
Designers and engineers are not overlooking this problem. In fact, they have studied the situation in detail. Their studies have shown that once a driver becomes accustomed to a certain system, s/he can generally locate the desired control without actually looking. Therefore, obtaining information about the average fuel economy happens as easily as tripping on the turn indicators.

Of course the key is to become familiar with the system. The more intricate and involved, the longer it's going to take.

For example, Oldsmobile says that driver convenience, information, safety and ease of service were the main considerations in the design of electronics for use in the 1986 Toronado. The design includes a body computer that receives information from sensors located throughout the car to control the instrument cluster, gages and message center, the operational voice control system and all engine functions.

A portion of the Toronado instrument panel provides diagnostic information for the driver. This center can alert the driver of problems through a driver warning system, a system monitor function and a serviceability function.

The driver warning system is equipped



(left)
How many computers and controls can be stuffed into a small area? The answer is probably more next year and the year after than there are this year.

(below)
Using ergonomic principles, instrument panels such as this 1986 Mercury Sable are designed with the driver in mind. All the controls are easy to reach and operate. However, as with any new product, the driver must take time to learn locations before driving.

(bottom)
Buick engineers say that once you become accustomed to something new such as the Graphic Control Center it falls as easily to hand as the 91 controls it replaces.

with 26 diagnostic and 11 trip monitor messages alerting the driver to situations such as low brake fluid, burned out bulbs or an overheating engine.

To check if the car is in proper running condition, the driver can activate the system monitor function. As part of the Toronado's diagnostic information center, this feature conducts a quick and thorough test of the instrument panel to identify any problems.

The body computer also allows the Toronado to be "smarter" in how and when it presents its messages and reminders to the driver. These signals can be noted in an instrument panel light, a chime or in an optional voice mechanism. Reminders such as "fasten safety belts" and "door ajar" will not appear unless the car is running and in gear.

In addition to supplying information to the driver, the body computer aids in serviceability by providing information to the service technician. By using a special code, the technician can quickly and more accurately check the functions of virtually every system of the car.

The Toronado's heating-ventilation-air conditioning (HVAC) system is also electronically operated. Each of the three HVAC areas — temperature setting, blower and air distribution — can be fully automatic or manually operated individually.

Meanwhile the Toronado's sister car, the 1986 Riviera, will be equipped with between seven and 10 microprocessors — all of which interface through Riviera's exclusive and standard Graphic

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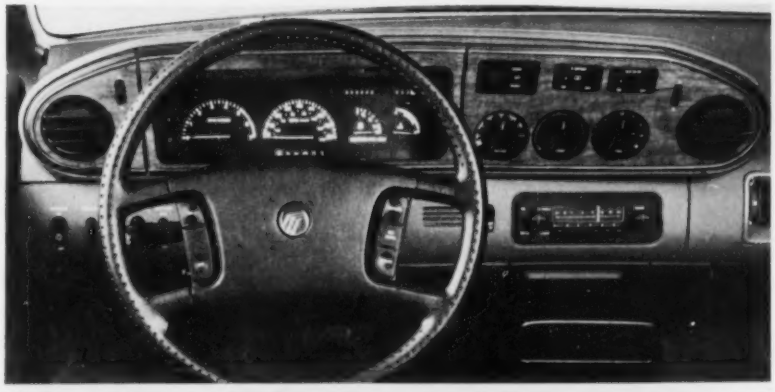
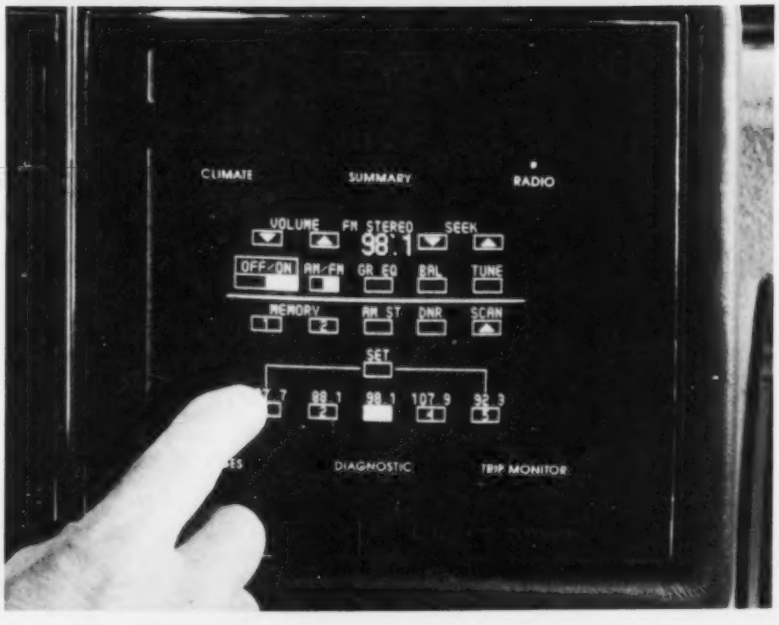
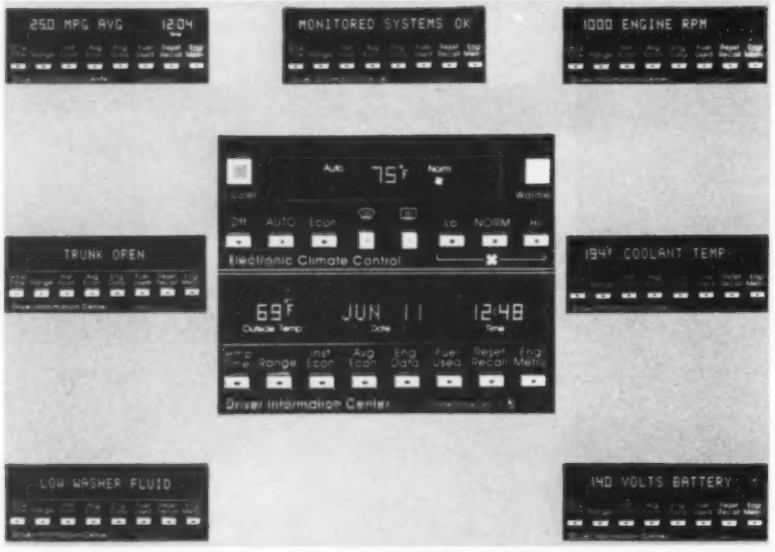




If a normal Pontiac 6000 doesn't have enough instruments and controls, try the 6000 STE with its second set of radio controls in the steering wheel.

Yet another device found in 1986 new cars such as the Cadillac Eldorado and Seville is the cellular telephone in a locking storage compartment under the front console armrest. The telephone does have a "hands-free" operating mode.



This is a sample of the information that's available at the touch of a finger tip from the climate control driver information center in the 1986 Cadillac Eldorado and Seville.

Control Center (GCC)

The GCC, operated from a touch-sensitive cathode ray tube, is the control center and central information display for the 1986 Riviera. It replaces 91 controls required to accomplish the same purposes with conventional systems, and can call up information in six basic areas: climate control, radio, trip monitor, gages, and diagnostic information. When the ignition key is turned, a summary page displays information from all access areas. An estimated 90 percent of the driver's needs can be handled from this single page of programming. To access other information, the driver need only touch the appropriate spot on the screen.

You only have to look at Cadillac's list of electronic systems to be overwhelmed by the features inside today's cars.

- Electronic control module
- Body computer module
- Diagnostic systems
- Assembly line diagnostic link
- Viscous converter clutch
- Electronic anti-lock braking system
- Cellular telephone
- Sound systems
- Electronic digital instrument clusters
- Fuel data center
- Electronic climate control
- Driver memory seat
- Automatic day/night mirror
- Dimming sentinel
- Twilight sentinel
- Garage door opener
- Theft deterrent system

If this isn't enough, while all radio controls are located on the instrument panel of the 1986 Pontiac 6000 STE, a second set of fingertip controls are now integrated into the center of the new four-spoke, leather-wrapped steering wheel. According to Pontiac, this design provides a more driver-oriented environment and increased convenience.

As was pointed out earlier, once the driver becomes accustomed to the locations of all these functions they should fall as naturally to hand as the turn signals. Like any other learning process, the trick is to survive the initial period.

[1]*The American Automobile Association, better known as the auto club.*
[2]*Zahnradfabrik Friedrichshafen, a German company that manufactures transmissions and transaxles.*

Unforgetable Experience

by SSgt. Craig M. Feasel
Shaw Air Force Base,
South Carolina

It was a Friday in late summer. I had gone downtown about 1400 to get new tires put on my car. I finished the paperwork at Cardinal Tire on highway 378 and was going back out to my car in the parking lot when a terrible auto crash occurred 200 yards down the highway from where I was standing. I immediately ran toward the accident, reviewing CPR class over and over in my head. There was a cloud of smoke above the two cars from the sheer energy involved. One car traveling 70 or 80 mph (as estimated by highway patrol and witnesses) had t-boned broadside into another car, dead center on both left doors.

As I was running I could see drastically deformed metal and I knew CPR would probably be needed. I could now see a body lying next to one vehicle and there was blood everywhere, on and around both vehicles. Another Air Force NCO had just pulled up and gotten out of his van, but he was walking around in astonishment at what he was looking at and didn't seem to know what to do. The victim of the first car was bleeding severely from his head. I finally got the other NCO's attention and we carefully wrapped the victim's head and curtailed most of the bleeding. I asked him to stay there and hold moderate pressure and he said "O.K." That victim was conscious, strong, and fairly coherent.

The entire left side of the other car was completely caved in all the way to the car's center line. There were three adult females in the car, badly injured. The car was so mangled, it was hard to analyze the situation, so I crawled on to the trunk to the rear window which was the only access. I was maintaining my composure pretty well until I looked down on the rear seat and saw a baby about 30 months old lying face up just about to drown in the blood from her chest and mouth. The baby's mother was next to her screaming. The car metal wrapped around her left leg pinned her to the seat. I cleared the baby's mouth as much as possible and luckily she started breathing successfully on her own.

A nurse appeared out of nowhere and I told her I was running to call for the "Jaws of Life" and three ambulances and she said, "That's our highest priority!"

Heavy traffic congestion now had over 100 people standing all around gawking at what was going on — not knowing what to do or frozen in fear or astonishment. I wanted to tell someone else to call but no one seemed "gathered" enough to do it. So I ran into S-Mart's store, dialled 911, and some sergeant answered the phone. I said, "The 378 accident at S-Mart absolutely requires three ambulances and as many 'Jaws of Life' as you can get us. This is SSgt. Feasel, active duty Air Force. Did you understand that? I'm leaving the phone!" He replied, "Thanks, you got it!" and I ran. (That entire phone call, by the way, took less than 15 seconds by my watch thanks to the 911 number.)

When I got back to the accident scene, one ambulance was arriving, the nurse had started controlling bleeding, and miraculously the victims were conscious, breathing, and had fair pulses. About 10 minutes had gone by (on my watch) since impact but it seemed like a week. The nurse, ambulance techs, and I began body boarding, leg/arm bracing, and neck wrapping victims out, one at a time. There were multiple bone breaks, one broken back for sure — maybe more — and enough blood to fill a bath tub, but things seemed to be going as well as could ever be expected under the circumstances.

About this time, the two additional ambulances and the fire rescue trucks I'd called for could be heard, but they had about 1½ miles of backed-up traffic to get through. I helped bandage and load the victim with head injury into the first ambulance. We prepped the other victims as much as possible as the other rescue units finally arrived.

We got everyone out of the car except the baby's mother and began working the "Jaws of Life." The fire department captain was very good with them but it still took us another hour to get the lady out of the car. I couldn't believe she didn't pass out from pain. All we could do was hold wood blocks for the "Jaws" the captain was running and hold her hand with our other hand. She almost broke my hand twice from squeezing so hard. Her left leg was probably broken in 100 different places from her hip to her toes. The only reason she didn't bleed to death was that the metal was crimped so tightly around her leg.

No seat belts were worn by anyone in this accident. No child seat was used or available. I don't know any of those victims but I'll never forget the pain on their faces. The message to me, and I hope to others, out of this accident is this:

(1) Always wear your seat belts and use child seats — you'll never hear or see enough evidence of that!

(2) Educate yourself about the blind spots in your car.

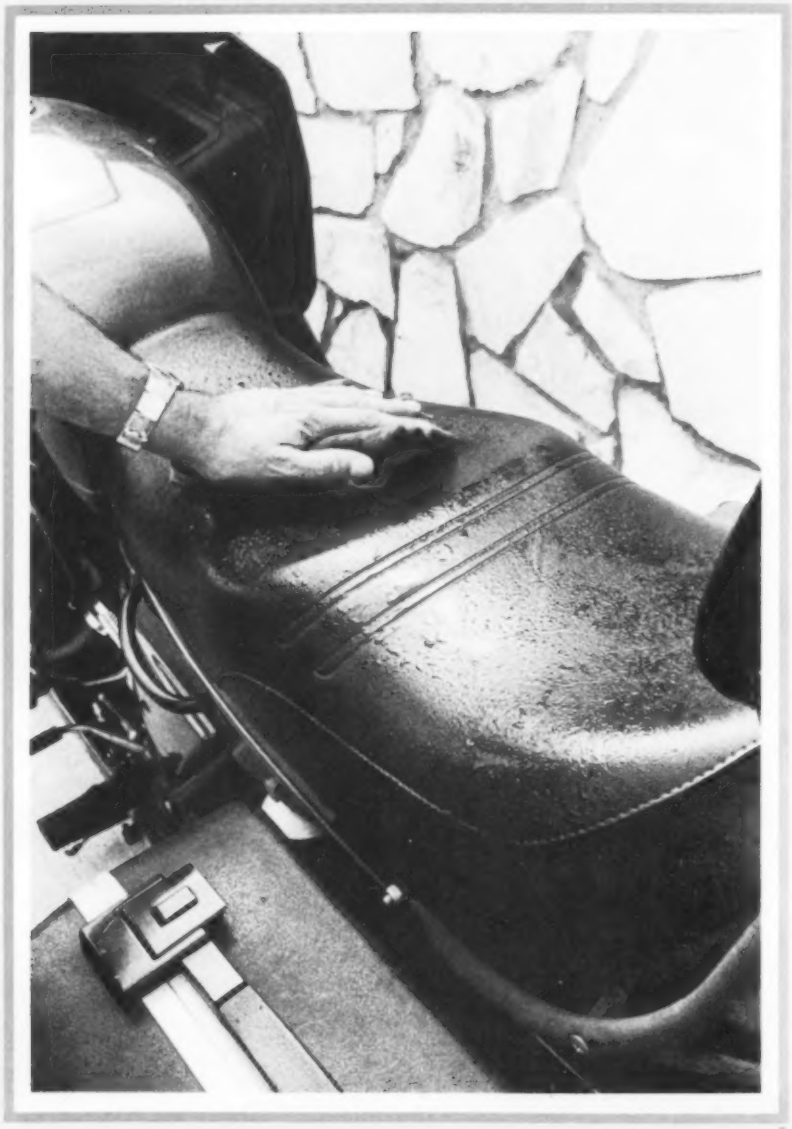
(3) Never trust a single look — ALWAYS LOOK *TWICE*! If you don't you're leaving yourself wide open.

GET IT ON!
MOTORCYCLE SAFETY FOUNDATION

STAY

IS YOUR SEAT WET?

by TSgt. Paul W. Sclarappa
Offutt AFB, Nebraska



You come out in the morning on the way to work and your motorcycle seat is wet. You look around. It didn't rain (the car is still dry except for the rear window).

You wipe the seat off and crank up the bike. It warms right up, as it does every morning, so you drop it into gear and down the road you go. By now that slightly wet seat is forgotten. The wind in your face wakes you up and you feel great!

You're coming to that one curve that excites you every morning (you know the one you lean into and grab a handful of throttle). The bike responds beautifully in this turn and you feel on top of the heap. But when you hit "your turn" today, you see a few leaves on your side of the road — no problem.

Then you remember the wet seat.

You're the first one to take this turn today, and you get to take the moisture off these few leaves. For those of you who ride bikes, I don't have to go into detail. You know what might happen now: The narrow tires of the motorcycle will slide across the wet leaves and you stand a good chance of dumping the motorcycle, if not going into the opposite lane or off the side of the road.

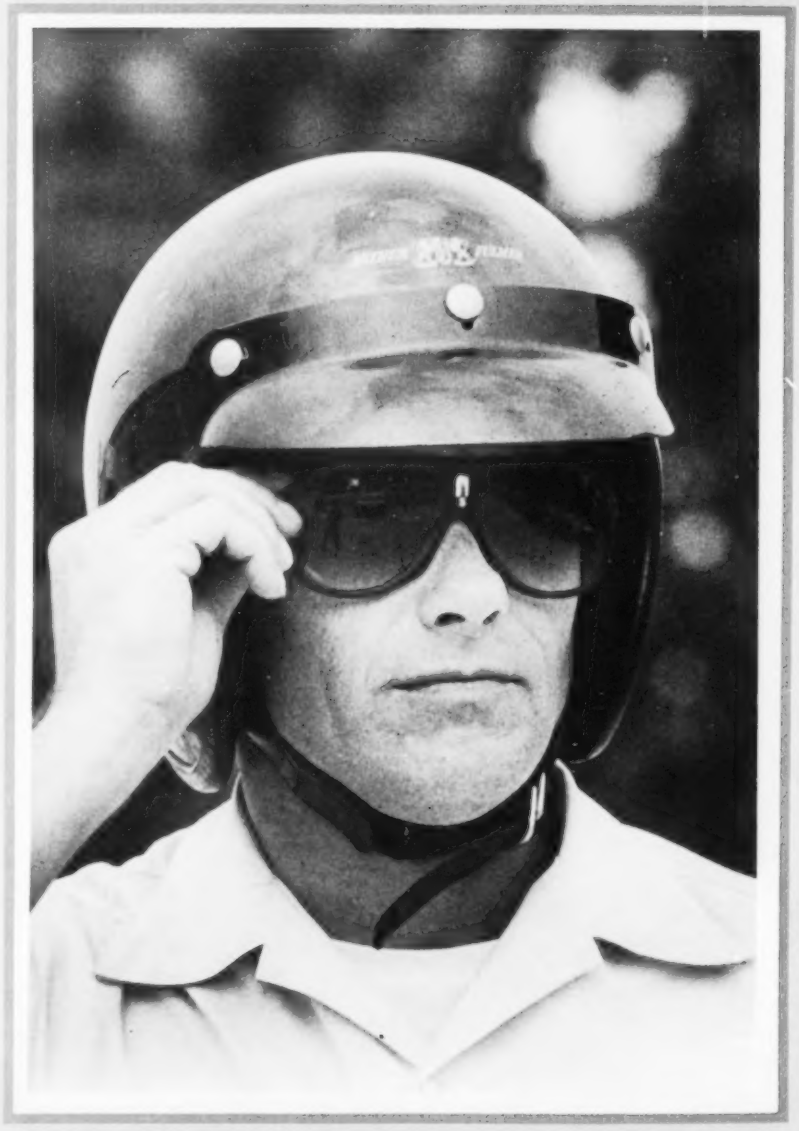
But what about that car, that four-wheeler behind you? Does he or she know what's going to happen? Chances are not likely.

Things such as the wet saddle on your motorcycle are signs of the change in environment that comes this time of year. Take the time to think about these clues before taking off on your bike and while riding.

ALERT

PLAN AHEAD

by TSgt. Paul W. Sciarappa
Offutt AFB, Nebraska



It's Friday and all the week's work is done. It's time to hit the road with that brand spanking new, just-traded-in-for bike. This will be the first long ride since you picked it up Monday night.

You went to Course 7 and MOST II on your old bike at the beginning of summer. The new one is the same size as the old one, so you've got it knocked, right?

You feel good on this new bike: No more fairing and saddle bags to weigh you down — just raw machine.

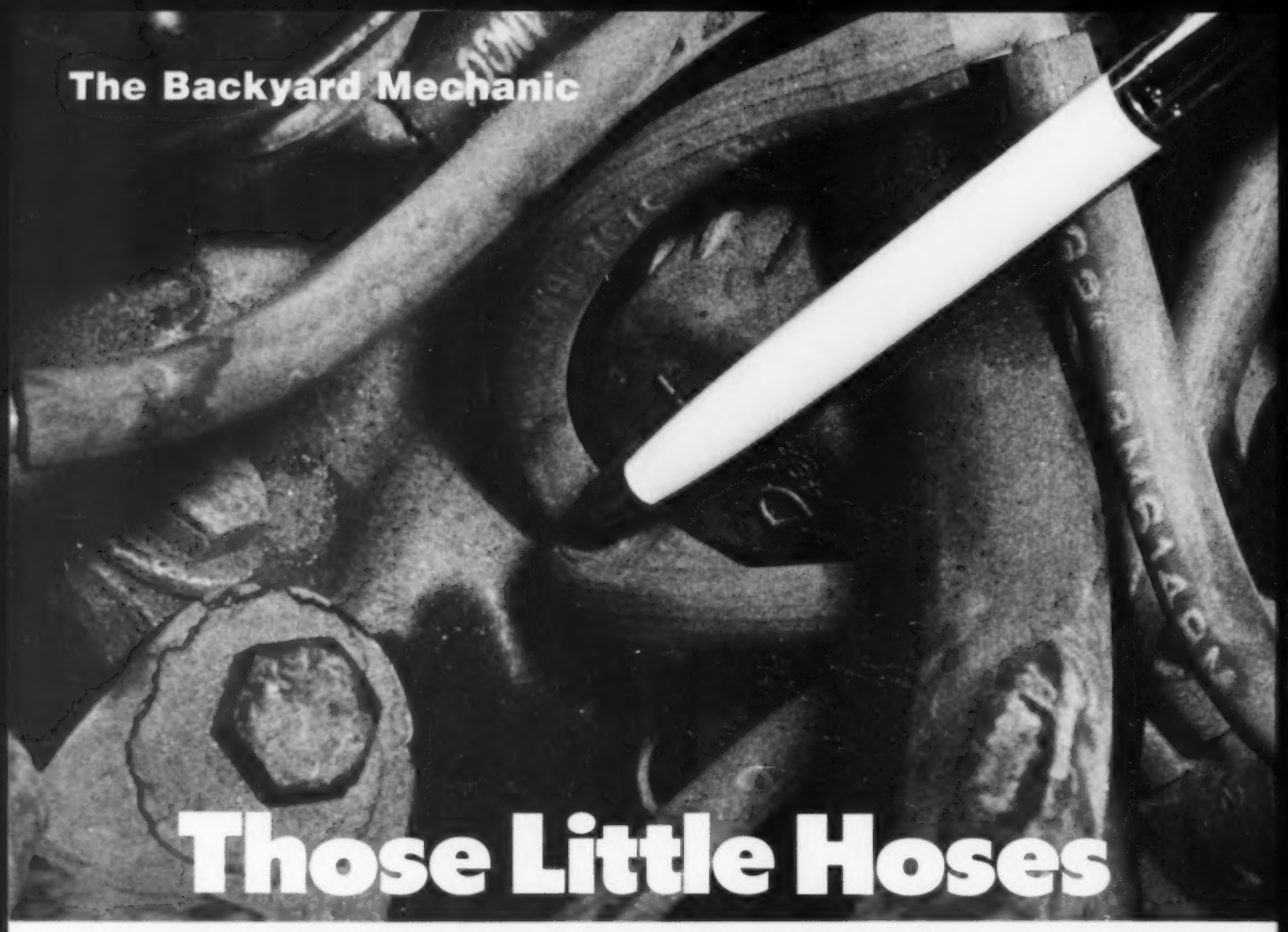
Where to go? The answer is Dover AFB, Del., to see some of the guys you went to leadership school with. So you leave McGuire AFB, N.J., in good spirits. All the way down, the weather is a beautiful 78 degrees. The sun is at your back at tree top level and the bike couldn't handle any better.

When the sun starts going down you know it's getting late and time to head back. You decide to take 295 because you think "it's fastest at night."

Oops! The sunglasses you've been using despite the Air Force's warnings that they don't qualify as eye protection are too dark for night time riding. There's no faceshield on the helmet because you have a windshield on your fairing. Oops, again: You *had* a fairing on your old bike. But, then again, the fairing's windscreen was also considered inadequate eye protection by the Air Force.

No sweat, you can make it. So off you go. Traffic is light; it's a little chilly — but not bad. Remember how warm it was behind the fairing on the old bike? You think, "I won't need that insulated jacket even if I didn't bring it. Well there's always the sweatshirt in the saddlebag." Oops, again! What saddlebag?

You get the picture I'm sure. This and the wet seat stories are just that, stories. They point out your need to keep alert. Their northeastern setting strengthens the emphasis on this. Be aware of conditions and things around you, and as always PLAN AHEAD. At this time of year, don't bank on the weather not changing. Consider every contingency, and expect it.



Those Little Hoses

As vacuum hoses get old they tend to become more flexible in some areas, which can lead to kinking or pinching and cause engine driveability problems.

Your car's engine creates and operates on a vacuum. The vacuum is created in each engine cylinder as the piston goes down on its intake stroke. When the intake valve opens, the fresh fuel charge is drawn from the intake manifold into the combustion chamber. In turn, this creates a vacuum in the intake manifold.

When the engine is operating properly there is a steady, constant vacuum at idle as each cylinder smoothly and efficiently draws in its fuel charge.

This vacuum is used to control other engine parts and accessories. It was originally employed to run the distributor vacuum advance, windshield wipers and the motor for the heater air duct door. Later the automatic choke and power brakes were added to the system.

Then, as numerous emission controls became mandatory to meet rigid Clean Air Act standards, a spaghetti factory of vacuum lines sprang up under the hood. More vacuum hoses were also plumbed into the system by engineers refining ignition and fuel controls.

It's not uncommon for today's "smart" engines to have 10 or more vacuum hoses connecting and interconnecting among vacuum operated devices all doing vital jobs.

If, for whatever reason, several vacuum hoses get removed from their source taps at once, it takes real skill to unscramble the resulting mess and reconnect them properly. For example, if you remove a carburetor for a rebuilding job, the engine may never run right again unless you connect the proper hose to the one of seven or ore vacuum taps.

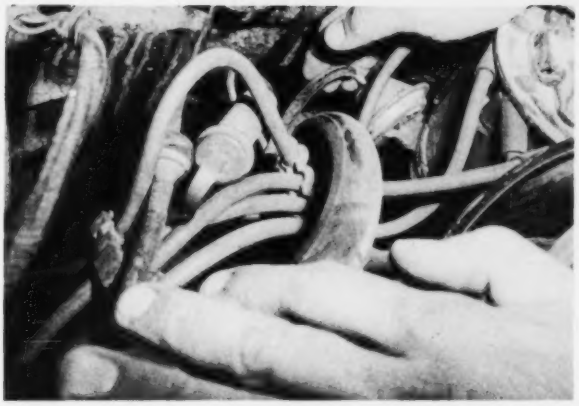
What's needed when working with vacuum hoses is a road map. Fortunately road maps to the vacuum lines are usually printed in shop manuals (usually in the emission control service and repair section). If not, then you'll need to learn how to read the Emission Control Label schematic attached to the vehicle under the hood.

Of course, one of the best ways to avoid this problem is to label the hoses as they're being disconnected. You can use clothes pins or tape numbered with a black felt tipped pen. It is best to disconnect each hose in a logical sequence, either starting on the right or left side of the engine or working from front to rear.

All kinds of starting and driveability problems can result if those small hoses get connected to the wrong vacuum source. The same problems can pop up if those hoses are kinked, pinched, split, cracked, plugged or shaken loose from their connection.

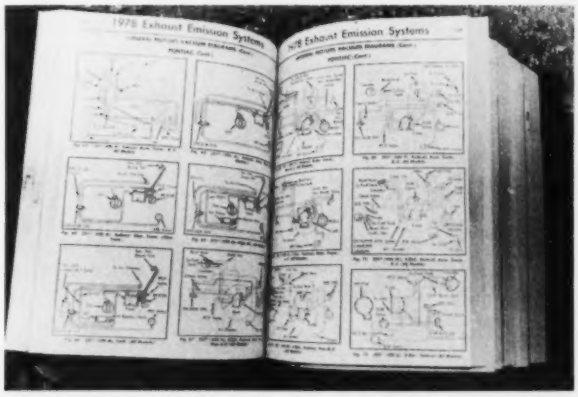
In fact, the accompanying chart lists 14 major engine operating problems that can result from misconnected and/or damaged vacuum hoses.

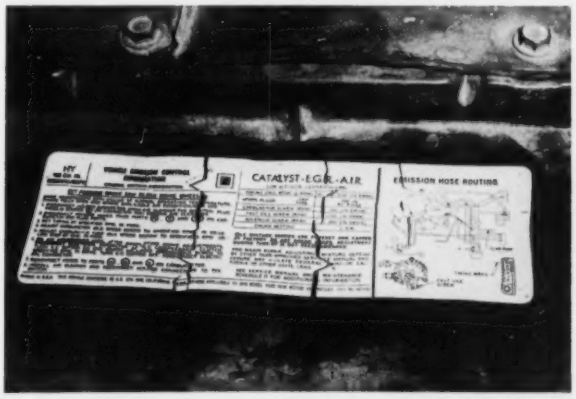
Therefore, it's extremely important that you regularly inspect all vacuum hoses along their entire length. Check them for kinks, pinches, splits and cracks. Be sure to look carefully in hard-



It used to be the only vacuum hoses you had to worry about led to the vacuum advance on the distributor (rear).

When disconnecting vacuum lines label them with numbered pieces of tape or clothes pins.





Road maps to vacuum hoses are printed in most shop manuals as well as on the Emission Control Label schematic attached under the hood. Reading them takes patience, however.

to-see places such as under the air cleaner. Also make sure the hoses are tightly connected at all attachment points.

Remember, the hoses live in extremes of heat and cold, engine fumes and ozone. After a few years of these daily attacks the hoses get old, tired and brittle.

Eyeballing the vacuum hoses can quickly lead to correcting an engine problem without wasting a lot of time on other more sophisticated, time-consuming, checking-and-testing procedures.

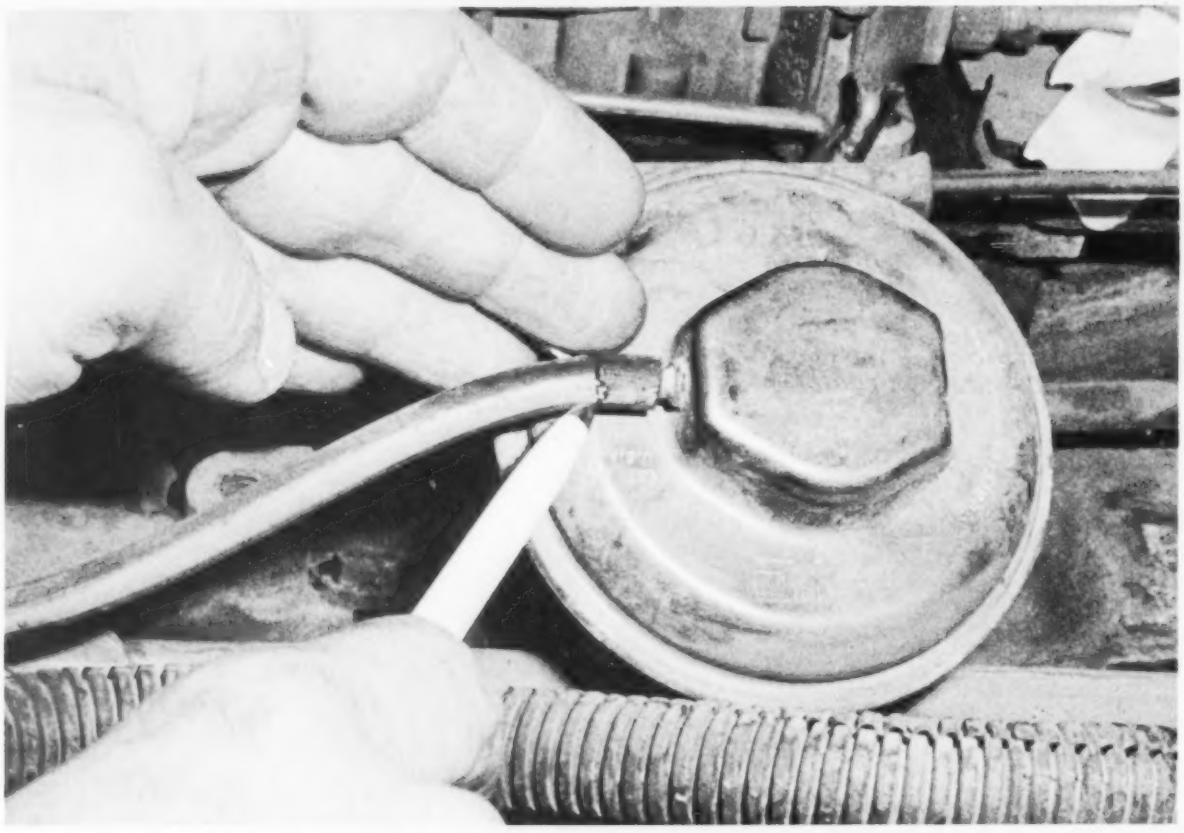
Naturally, all the symptoms on the accompanying chart can also be caused by malfunctions in the ignition system (including spark plugs) as well as the electronic and emission controls. Therefore it makes common sense to make sure all the vacuum connections and all the vacuum hoses are in top-notch condition before getting involved in some other long, complicated troubleshooting.

As with all systems, if you find one hose that's bad, you should replace all the vacuum hoses.

Many engine problems can be traced to something as simple as a disconnected vacuum line.

continued

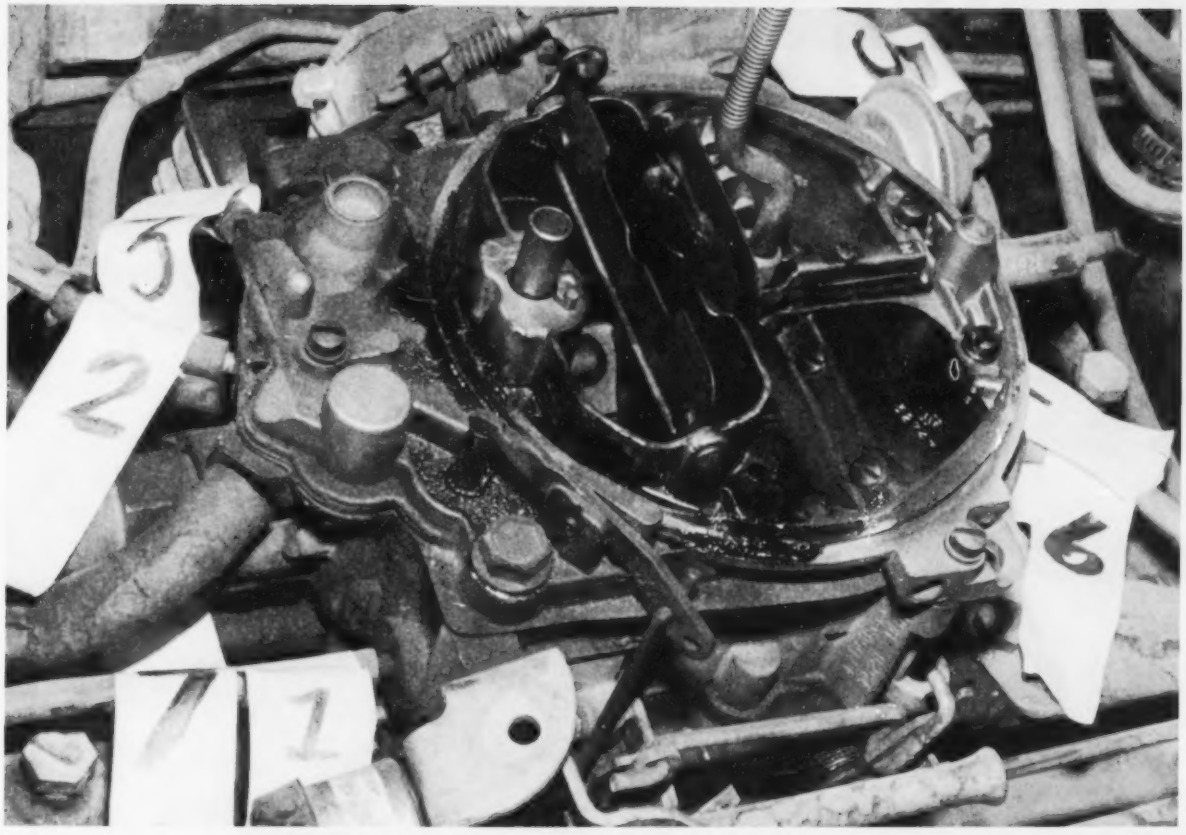
continued



Heat and cold, engine fumes and ozone can take their toll on vacuum hoses, causing them to split and crack.

BAD VACUUM HOSES CAN BE THE CAUSE OF THESE SYMPTOMS

PROBLEM	ENGINE HOT	ENGINE COLD	DEFINITION
No Start	X	X	Engine cranks OK but does not start. May fire once or twice.
Hard Start	X	X	Engine cranks OK but does not start for a long time. Eventually runs.
Stall After Start	X	X	With three minutes after start. Engine: ■ Stalls after brief idle. ■ Dies as soon as any load is place on engine. (A/C turned on/Transmission engaged.) ■ Dies on initial drive-away.
Hesitation/Sag Stumble	X	X	Momentary lack of response as accelerator pedal is pushed down. Can occur at all speeds. Usually most severe when first trying to make car move. If severe enough, engine may stall.
Surges	X	X	Engine power varies under steady throttle or cruise. Feels like the car speeds up and down with no change in accelerator pedal movement.
Lack of Power/ Sluggish	X	X	Engine delivers less than expected power. Little or no increase in speed when accelerator pedal is pushed down part way.
Backfire	X	X	Fuel ignites in intake manifold or exhaust system making a loud popping noise.



Numbering the vacuum connections is critical especially when carburetors may have seven or more taps.

Misses	X	X	Steady jerking (or pulsation) that follows engine speed. Usually more pronounced as engine load increases. Not normally felt above 1500 rpm or at 30 mph. Exhaust has a steady "spitting" sound at idle or low speed.
Rough/Unstable or Incorrect Idle/ Stalling	X		Engine runs unevenly at idle. If bad enough, the car may shake. Also, idle may vary in rpm (called "hunting"). Either condition may be bad enough to cause stalling.
Won't Idle	X		Engine starts OK but dies at idle rpm. Will run if accelerator pedal is held at part throttle.
Poor Fuel Economy	X		A noticeable decrease in fuel economy (miles per gallon) from what the engine delivered in previous months.
Dieseling		X	Engine continues to keep running after ignition is turned "off." But runs very rough.
Detonation/ Spark Knock		X	A mild to severe ping. Usually gets worse under load acceleration. Sharp metallic knocks that change with throttle opening. Sounds like popcorn "popping".
Excessive Exhaust Emissions (Odors)		X	Engine fails an emission test. May also have an excessive "rotten egg" smell. (Hydrogen Sulfide)

Backfire LETTERS TO THE EDITORS

NOT SEEN MOTORCYCLE STEERING COVERED

I have read several articles in Driver over the past few months on motorcycle safety. One of the most important safety aspects is knowing how to steer a motorcycle properly, which I have yet to see being covered in the magazine. But, how many people know the important rule of 'push right to go right,' 'push left to go left?' Even new buyers are not always informed of this fundamental rule by their dealers. As Driver is concerned with everyone's safety, I would think that this issue should be given just as much coverage as all other motorcycle safety issues.

Thank you for your concern on this issue.

Douglas S. Grant
Omaha NE 68105

A September 84 article last covered the subject in depth. As for being informed, for the most part the military motorcycle riders are required to attend a course where this is taught and we always stress such hands-on training for all operators at least every other year.

PLAYING THE ODDS

As an aviator and a strong, vocal proponent of using seat belts, the old analogy of, "Would you fly an aircraft without strapping in?" often crops up in discussions. Well, of course the answer is "No." But, if given the hypothetical choice of having either to ride in a car without seat belts fastened or not strapping into aircraft, I might choose to "strap in" in the car — that is, if I were playing the odds. (Cat shots and arrested landings excluded!)

CDR David H. Finney, USN
Patuxent River MD 20670

KEEP YOUNG WARRIORS OFF THE CONCRETE

I've seen plenty of good information come through the pages of Driver, but you still don't seem to concentrate on one of the big problems when trying to navigate a motorcycle on America's highways; America's car and truck drivers. Now granted, most people think they're good drivers and usually are until confronted with something unexpected that forces them to shift their brains out of neutral. This unconscious driving has killed more motorcyclists than any other two combined problems. I personally have been the victim of the "sucker turn" at least once. That's where the car in front of you pulls into the left hand lane, signals, turns directly in front of you and then screams bloody murder when "that crazy biker came out of nowhere and slammed into my hood." Needless to say, I missed his hood otherwise I wouldn't be writing this.

But to make a long story short, it's the driver of the four-wheeler who over half the time makes the mistake because HE'S NOT AWARE OF HIS SURROUNDINGS! How often do you find yourself being surprised because "I didn't see him?" In Japan, that's known as criminal negligence and can get you up to a year in the slammer if you cause injury or an accident. Hmm, maybe the Japanese do have a few good ideas! They also have the most difficult licensing procedure in the western world. The first thing the instructors tell you when you try to get your off-base license is "don't try to keep up with the Japanese riders." That's because they'll put you in the weeds (or somebody's front bumper) every time. Are they that much better? Well, I've only seen one person who could outdo them. He'd had his AMA amateur card since he was 13.

One last suggestion before I go. How about making the Motorcycle Safety Foundation rider course mandatory for every rider, even if they've passed the simple base level tests that pass for a qualification exam? I've gone through it and gained a lot of valuable info. Keep up the good work. Maybe we can keep some of these young warriors off the concrete and in the wind where they belong.

SSgt. Christopher J. Schwehr, USAF
Scott AFB IL 62225

A CONVERSATION PIECE?

I like reading your magazine but there's one thing I really haven't seen stressed enough (minor that might be) and that's the use (or lack of use) of the signal indicators (in the layman's terms, blinkers). Apparently most people do not know what they are there for (maybe a conversation piece). I think they help contribute to accidents because you do not know what that person is going to do (or where he/she is going to do it). Also, there are some who like to use it while doing the actual turn (as if it wasn't obvious). I think it would help all the way around if people used their blinkers more and in advance. Thank you.

TSgt. Dennis D. Osbon, USAF
Ft Hood Tx 76544

Yes indeed. State laws establish how far in advance the driver should signal. Almost as bad as not signaling at all is failing to cancel a signal after turning.

A VOTE FOR 55

Lately I've been hearing more and more people say that if we have a National Seat Belt Law or passive restraints there'll be no real need for the 55 mph speed limit; therefore the law should be changed raising the speed limit to 70 as it was in 1973 at least on Interstates. To these people I have the following comments:

1. In 1973, cars were more crashworthy than they are now. Most cars now are nothing more than rolling tin cans.
2. In 1973, traffic on highways was not nearly as bad as it is now.
3. No one drives 55 mph anyway — more like 65 mph. If you raise the speed limit to 65 or 70, people are going to drive 80 mph. Sure suicide — for you, me and anyone else on the highway.
4. If people drove the Interstates around large Texas cities as I do, and points between, they would see the problem a lot differently.
5. If you raise the speed limit anywhere, you are neutralizing the effectiveness of seat belts.
6. What good are seat belts if the car crushes up around you like an aluminum can around a tomato!
7. Walk through a half dozen or a dozen wrecking yards and look at what is happening under our 55-mph speed limit, and *then* tell me what you'll be seeing at 70-mph speed limits.
8. Take a good look at the U.S. Government crash tests, as inadequate as they may be, and tell me things will be better

at 70 mph!

9. If you have a father, mother, sister, brother, wife, children or anyone you really care about — unless they are all driving very large cars of previous years — you are very likely signing their death warrant if you increase the speed limit.

If you print this letter, please withhold my name; I get enough static from the people I work with about my ideas without them seeing this.

Good Ol' What's-His-Face
In One of Them Big Texas
Military Cities

ANGUISH OF THE "UN-DEAD"

For a long time now I've heard that helmets and seat belts save lives. I don't dispute the facts and continue to do all I can not to tempt fate. However, everyone doesn't have the same thought process and considers "helmet and seat belt propaganda" as another way for someone else to get rich, or as an infringement on their rights. Besides, "it's my life. If I get killed, who will it hurt besides me?"

Good question! O.K. If you get killed, you will hurt your mom, dad, sisters, brothers, spouse, children, dog, cat, bird, and anyone or anything else that depends on you for support, love, companionship, and guidance. If you get killed, you will hurt your friends, your employer, your country, and anyone else who counts on you to be there when the need arises. Of course if you get killed, in time your cherished memory will fade, the kids will get used to calling someone else daddy or mommy, dog's have short memories, and the insurance will make a great down payment on a new house. And of course, I'll find a new friend, we'll train someone else, and a new defender of our country will emerge. But what happens if you don't die and you don't recover?

Vegetables abound in more than supermarkets. You might know one. Sometimes it happens because of motorcycle accidents where a helmet wasn't worn, or where a head meets a windshield because the owner wasn't strapped in, or when the "no-hands" cyclist hits a pot hole and his head hits the pavement, or the jogger expected the car to stop. Better if they had died! You're still alive! The mourning is never quite finished; love becomes a burden, then a chore, then resentment, and finally hate. There is no cherished memory, no going forward, no finality. You are a financial burden to your family and society. You're unwanted baggage; you're un-dead.

A pretty bleak picture? It happens, not to many, but it happens. And "it's your life," or is it?

MSgt. Robert L. Hudon, USAF
Ontario ANGS CA 91761-7627

NINETY PERCENT?

I read "OR NOT TO SWEAT" by Terry P. Ryan in the July '85 Driver and found it to be very informative. All riders need to be reminded of the consequences of being unprepared. There is one point, though that I don't agree with. Terry said "Ninety percent of all cyclists involved in accidents did nothing before their mishap (i.e. braking, countersteering, etc.)." According to a study of 900 motorcycle accidents in the Los Angeles area by the University of Southern California (commonly called the Hurt Report), it was found that ". . . foremost in these data is the fact that 31.9% of the riders did NOTHING in the way of evasive action in the precrash time."

I'd like to know where Terry came up with the figure 90%.

Sgt. Mike House, USAF
Minot AFB ND 58704

Terry? Anybody?

TWO OPINIONS
ABOUT MOTORCYCLES

I was greatly distressed and disappointed in your judgment to print MSgt. Petron's article "In Favor of Motorcycles" in your July issue. In the last 11 weeks my ship has lost four sailors to motorcycle accidents (one by death and three by transfer due to injury extent). The *last* thing we need in the military is a respectable, normally outstanding publication like *Driver* spreading the incredible notion that we'd be better off with more motorcycles out there.

Whether a large increase in the use of motorcycles as a means of transportation would eliminate traffic jams and parking problems or drive down pollution and the price of gas is irrelevant. All those arguments are insignificant when compared to the human cost and tragedy that result when our people that ride *outside* the vehicle are involved in an accident.

MSgt. Petron simplistically compares the danger involved to that of electric drills and deep-fat fryers, noting how we still manage to drill holes and fry potatoes safely *most* of the time. Point is: when we *don't* drill holes or fry potatoes safely, the results are seldom fatal.

I don't think a publication like yours is obliged to present the "other side" on this issue. I believe the Air Force Inspection and Safety Center's position on this is identical to that of the Naval Safety Center, and I agree wholeheartedly with SSgt. Zenda's advice (Letters to the Editor, July '85): *Stay away from motorcycles.*

Cmdr. Robert A. Brooks, USN
FPO Miami FL 34088-2700

I have just read "Stay Away from Motorcycles" in Backfire, July 85 issue. While SSgt. Zenda's view point has merit, I would hate to have a doctor that opinionated about appendectomies.

In the U.S. in 1979, we killed 748 people per 1,000,000 miles traveled. Eighteen of these deaths were from motorcycles (based on figures by the National Safety Council). Based on this I could state that motorcycles are safer than automobiles and everyone should have one.

I'm not much for everyone having a motor vehicle (much less a motorcycle) anymore than I would promote a national policy on NO DRIVING ON SATURDAY, because we kill more on Saturday than any other day of the week.

What I'm trying to say is that when I've done everything by the book, I've had fun and enjoyed the trip. On the other hand, when I failed to obey the rules, or didn't know them, I've paid the piper.

I'm thankful that I never owned a cycle till I was 30. The basic course was an eye opener, but even more so are the articles found in *Driver*. I read them, like a man in the desert wanting water! Keep up the good work!!

SSgt. Clint Bissell, USAF
Hill AFB UT 84056-5000

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YIELD

Don't Give Up

The inverted triangle **YIELD** sign with its red border requires a driver to give the right-of-way to traffic that is close enough to be a hazard. It doesn't imply that you have to give up attempting to merge with traffic having the right-of-way. A basic part of having the right-of-way is the duty to drive in such a way as to avoid accidents. Remember when approaching a YIELD sign, you have to make a decision. That decision may be to stop or slow, but it shouldn't be to give up and frustrate the traffic behind you with your inability to merge.